BP BLOGGER: DESCRIPTIVE STUDY OF ELECTRONIC KNOWLEDGE DISSEMINATION IN LONG TERM CARE

by

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Abstract

Little is known of the uptake and use of knowledge disseminated in electronic formats, especially in Long Term Care (LTC) settings. The purpose of this descriptive study was to examine the dissemination of the BP Bloggers, a series of brief, evidence summaries designed to meet the knowledge needs of LTC staff. Guided by Rogers' (2003) Diffusion of Innovations theory, the study documents dissemination of the BP Blogger and examines factors affecting dissemination, awareness, perceptions and its use. The survey of BP Blogger recipients was conducted electronically (n=114) online (n=10), by telephone (n=55), and print (n=144). Managers usually received the newsletter electronically while staff in LTC were more likely to receive printed copies. Participants disseminated the newsletter through paper, email, or posting in the workplace. Most participants rated the content, format, and usefulness of the BP Blogger as good or excellent. Time and lack of email access were barriers to dissemination.

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Table of Contents

List of Figures

List of Tables

List of Abbreviations

Canadian Instiutes of Health Research	CIHR
Director of Resident Care	DRC
Heatlh Care Aide	H.C.A.
Knowledge Translation	KT
Local Health Integrated Network	LHIN
Ministry of Health and Long Term Care	MOHLTC
Occupational Therapist	O.T.
Registered Nurse	R.N.
Registered Nurses Association of Ontario	RNAO
Registered Practical Nurse	R.P.N.
Social Worker	S.W.
Personal Support Worker	P.S.W.
Physiotherapist	P.T.
Recreation Therapist	R.T.
Seniors Health Research Transfer Network	SHRTN
Tri-Council Policy Statement	TCPS

Chapter 1

Introduction

This study examined issues related to Knowledge Translation in the Long Term Care home environment. Everett Rogers' (2003) Theory of Diffusion of Innovations is described as the model selected to provide the theoretical foundation for the thesis research. The study was designed to examine the pathway of dissemination, perceptions and use of the Best Practice (BP) Blogger, an electronic evidence summary newsletter (van der Horst & Buckley, 2008).

The writer has worked in many different settings, mainly in psychiatric and medical nursing as well as being a case manager on a geriatric psychiatry outreach team. Most recently the writer has worked as a Psychogeriatric Resource Consultant in Ontario, with responsibility for education, consultation, and community development with Ministry of Health and Long Term Care (MOHLTC) funded agencies. She has collaborated on research projects in Long Term Care (LTC), best practice guideline development and implementation projects, and the development and delivery of workshops for caregivers working with complex elderly clients. There have been challenges in the work, trying to assist caregivers to implement evidence based practices, and the writer wants to ensure she is effective in the role. The writer started the Masters program to make improvements to practice as an educator and consultant, so that she would be doing evidence based Knowledge Translation (KT) in the LTC environment. Determining the pathway and uptake of the BP Blogger is, thus, interesting to the writer and highly relevant to her work role. It will fill a gap in knowledge regarding the reach of

electronic dissemination of information in LTC, and KT in LTC. The writer hopes that this study will assist professionals in making decisions regarding the allocation of resources and determining strategies to meet the information needs of point of care staff.

There is evidence of gaps between knowledge and practice in health care with global concerns about the quality of care in LTC (Janes, Fox, Lowe, McGilton, & Schindel-Martin, 2009). Studies have shown there are fewer resources, as well as less access to computers and evidence based information in LTC versus acute care (Royle et al., 2002). Surveys have shown that nursing staff and nurses' aides working with older people are not using current knowledge in their practice (Bostrom, Wallin, & Nordstrom, 2006). The gap between knowledge and practice is well recognized in the medical literature: "researchers in the U.S. and the Netherlands have estimated that 30-45% of patients are not receiving evidence based care, and that 20-25% of the care is not needed or possibly harmful" (Graham et al., 2006, p. 13).

The knowledge to practice gap in LTC homes has been well documented in news articles and reports. In the report of the *Independent Review of Staffing and Care Standards of Long Term Care Homes in Ontario* (2008), Sharkey points out the need for " a more evidence-based decision–making environment for addressing resident needs and changes in their health condition" (p. 19). The MOHLTC Consultants and the Seniors Health Research Transfer Network (SHRTN) (2008) reported on the consultation process to improve quality of care in LTC. Themes in the consultation include the necessity to create a culture of quality care and improvement, build staff resources, and increase capacity of staff through education.

The MOHLTC's Performance Improvement and Compliance Branch have funded an initiative entitled the Long Term Care Best Practice Initiative to address the identified gaps in care. The goal of the initiative is to "support long term care homes in adopting evidence-based practices that will support systematic and consistent approaches to providing quality care for residents" (Registered Nurses Association of Ontario (RNAO), 2011, Long Term Care Best Practice Initiative, para. 2).

Knowledge Translation (KT) is integral to closing the gap between evidence and practice. The Canadian Institutes of Health Research (CIHR) defines KT as a: "dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system" (Canadian Institutes of Health Research (CIHR), 2010, para. 1). The challenge of KT research is building knowledge about how to best bridge the gap between the generation of research knowledge and application of knowledge in practice.

Dissemination of information is an active process of spreading information, "targeting and tailoring information for the intended audience" (Lomas, 1993, p. 226). Traditional dissemination of information regarding best practices includes presentations, journal articles, best practice guidelines, brief topic summaries, conference presentations, poster presentations, videos, audiotapes, and professional associations (Scullion, 2002). Electronic dissemination of information, webinars, and information on web-sites are increasingly used to disseminate research knowledge. There is a need for increased understanding and refinement of knowledge about dissemination and targeting messages.

Dissemination is a necessary component of KT but insufficient to ensure practice change; support and facilitation to assist providers to implement information into practice enhances uptake of innovations (Lomas, 1993; Graham, et al., 2006; Harrison, Legare, Graham & Fervers, 2009; Ring et al., 2005). Furthermore, little is known about best strategies for KT, including dissemination, in LTC (Aylward, Stolee, Keat, & Joncox, 2003). Each health care environment has its' unique challenges. Grimshaw, Eccles, and Tetroe (2004) call for better understanding of KT strategies according to context and type of health care provider. It is questionable whether the results of most studies on KT are generalizable to the LTC context.

The needs of residents in LTC homes are increasingly complex, with the commensurate need for the use of best practices. The average age of residents in LTC homes is 83 years; greater than 85% require high levels of care and assistance; and approximately 73% of residents in LTC have some form of cognitive impairment (Sharkey, 2008). Studies suggest that 15%-20% of nursing home residents have major depression, 25% have symptoms of depression with lesser severity, 12-21% have psychosis, and 2.4% have schizophrenia, with limited accessibility of psychiatric and mental health services (Canadian Coalition for Seniors' Mental Health (CCSMH), 2006).

Meeting the needs of the residents in LTC homes is complicated by a larger client to staff ratio than acute care; an elderly population with complex medical, cognitive, and psychiatric conditions; and a higher proportion of unregulated care providers. Unregulated care providers make up 67% of the full time staff equivalents in Ontario LTC homes (Sharkey, 2008). The unregulated staff has minimal education preparation, and a high percentage of the unregulated providers are immigrants with literacy

challenges and a mix of learning styles and ability to implement new learning (Royle et al., 2002; Aylward et al., 2003). LTC facilities have fewer financial resources than acute care, with fewer libraries, computerized resources, fewer personnel with research expertise, and lack research and education committees (Royle et al., 2002). Innovative dissemination strategies are needed to meet the information needs of direct care providers.

A Regional Best Practice Coordinator in LTC, employed by the MOHLTC in Central South, Hamilton, Ontario assumed the challenge of disseminating best practice information in the LTC environment. Together with the librarian in the Long Term Care Resource Centre, she developed what she calls the BP Blogger: Myth Busting newsletter. The newsletter was developed to provide evidence based information that fits with the needs of the care providers in the context of LTC, to decrease the gap between research evidence and clinical practice (van der Horst & Buckley, 2007). As described by van der Horst and Buckley, the characteristics of the newsletter were designed to enhance caregivers' uptake:

- Narrowcast the information, target and connect with frontline staff
- Compelling and motivating to read
- Trendy: title, myth-busting concept
- Bite-Size pieces of information that are useable
- Applicable to their direct care situations and their topics
- Comfortable, emotive > feel good
- Credible-Latest > use current research and guidelines

- Readable > common language
- Quick > 1 page/2-sided (van der Horst, M. & Buckley, S. 2007)

The one-page summaries are a synthesis of research evidence about practice issues including recommendations for practice, as well as links and references to best practice guidelines and professional web-sites. The theoretical tenets of Rogers' Theory of Diffusion of Innovations (2003) have been used to enhance dissemination and uptake of the information, with consideration given to the advantage of the BP Blogger being a source of best practice information which is compatible with the values of using evidence based care. It is written in simple language, it is only one page in length, and it is easy to use the tips in practice with observable effects.

To date, 27 BP Bloggers have been developed and disseminated (Regional Geriatric Program (RGP) central, 2011). See Appendix A for an example of one BP Blogger. The developer, Mary Lou van der Horst, while in the position of Best Practice Coordinator disseminated the BP Blogger directly to Directors of Resident Care (DRCs) in LTC, and other contacts. She is now in another position but continues to develop and distribute BP Bloggers. BP Bloggers are now distributed via her email distribution list, which includes key contacts working in knowledge transfer positions such as Best Practice Coordinators, practice consultants and others who have asked to be included. These people then pass the BP Blogger on, either by email or by printing and distributing paper copies, until it eventually reaches point of care staff. The BP Blogger is now available on the RGP central web-site, (www.rgpc.ca) as well as the Seniors Health Research Transfer Network (www.shrtn.on.ca), and The Research Institute for Aging, (www.the-ria.ca).

This study addresses two gaps in knowledge about KT: (1) electronic dissemination of research knowledge, and (2) KT dissemination strategies in LTC. Little is known of the uptake and use of knowledge disseminated in electronic formats. The purpose of this study was to understand the pathway of dissemination of the BP Blogger. The study documents the flow of distribution of the newsletter in LTC; examines factors affecting awareness of the BP Blogger, perceptions of the tool, and the use of the BP Blogger in practice. The study questions are as follows:

1. What is the dissemination pathway of the BP Blogger in Long Term Care?
2. Does the BP Blogger reach the point of care staff?
3. How is the BP Blogger perceived by people who receive it?
4. How is the BP Blogger used in practice?

The Best Practice (BP) Blogger is an example of a strategy to disseminate best practice knowledge in LTC. Examining the uptake of the electronic newsletter in a descriptive study illuminates factors that affect dissemination of information in LTC, augmenting knowledge regarding the complex process of KT in facility-based LTC environments.

Chapter 2

Literature Review

This chapter describes theoretical models of knowledge translation. Rogers' (2003) Diffusion of Innovations theoretical model is described in more detail. Research about KT in LTC is reviewed. The design and methods of distribution of the BP Blogger are analyzed using Roger's theory. Conclusions are made about gaps in knowledge about KT in LTC and about electronic distribution of knowledge products like the BP Blogger. Finally, the thesis research questions are presented. KT and LTC terms used in the proposal are defined in Table 2.1.

Table 2. 1

Definition of terms

Term	Definition
Knowledge Translation (KT)	"the exchange, synthesis and ethically-sound application of knowledge-within a complex system of interactions among researchers and users-to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products, and a strengthened health care system" (CIHR, 2010, 1)
Diffusion	Diffusion refers to both the planned and the spontaneous spread of new ideas (Rogers, 2003)
Dissemination	Active flow of information that is targeted for the intended audience through methods such as presentations, mailings, advertising, and journal articles (Lomas, 1993).
Implementation	Innovation is put into practice (Graham, et al., 2006) Implementation involves tailoring the message to needs of the audience, identifying and assisting in overcoming barriers, and highlighting implications of the message to enhance the uptake (Lomas, 1993).
Research Utilization	The use of research to guide practice (Estabrooks, 1999)
Knowledge tools/products	Clear, concise, usable messages, accessible formats to influence behaviour (Davis, Goldman & Palda, 2007).
Point of care staff	Direct care providers (Adams & Titler, 2010.)
Social marketing	The "application of marketing concepts and tools drawn from the private sector to programs designed to influence voluntary behaviour of target audiences to achieve social goals" (Andreason, 2004, p. 56).

2.1 Theoretical Models for Knowledge Translation

2.1.1 Overview of Theoretical Models

Several theoretical models of KT were examined to determine which theoretical model should guide the thesis research. Criteria for selecting a model were inclusion of dissemination in the elements of the model, clarity, and research to support the dissemination element of the model. The models that were evaluated included Rogers' (2003) Theory of Diffusion of Innovations, as well as the Conceptual Model for Considering the Elements of Diffusion, Dissemination and Implementation of Innovations (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004). The Promoting Action on Research Implementation in Health Sciences (PARIHS) Framework (Kitson, et al., 2008), the Knowledge to Action Model (Graham et al., 2006), and the Participatory Action Knowledge Translation (PAKT) model (McWilliam, Kothari, Kloseck, Ward-Griffin & Forbes, 2008) were also evaluated. Social marketing theory as outlined by Lefebvre & Flora (1988) and social media analysis as described by Faulkner & Finlay (2006) were also evaluated with respect to factors affecting dissemination. Everett Rogers' Diffusion of Innovations Theory (2003) was chosen to provide the theoretical underpinnings for the development of this descriptive study. All of the reviewed models have strengths that will briefly be described.

2.1.2 Diffusion of Innovations

In his work, *Diffusion of Innovations*, Everett Rogers (2003) draws together research from diverse fields, including agriculture, medicine, and anthropological studies. The First Edition of Diffusion of Innovations was published in 1962. In this work, Rogers

described diffusion research completed until that time, as well as his seminal conceptual model for the diffusion process. Several editions of his work were subsequently published, compiling decades of research from multidisciplinary fields of inquiry, culminating in the Fifth Edition of the work published in 2003.

In *Diffusion of Innovations* (2003) Rogers explains how new ideas are spread throughout communities or organizations, and are adopted over time; he uses the word diffusion to refer to both spontaneous and planned spread of innovations. Subsequent authors in the field use the term dissemination to refer to planned spread of innovations (Greenhalgh et al., 2004). Rogers identifies four main elements in the theory of Diffusion of Innovations. Diffusion is described as a "process by which (1) an *innovation* (2) is *communicated* through certain *channels* (3) over *time* (4) among members of a *social system*" (2003, p. 11). Each of these elements is briefly described.

According to Rogers' (2003) theory, potential adopters will assess the perceived attributes of an innovation. Diffusion is enhanced if the innovation has the following attributes:

1. Relative advantage over others, such as convenience, social prestige
2. Compatibility with existing values, past experiences, or needs
3. Complexity, if it is perceived as simple to understand
4. Trialability, and
5. Observability, if results of the innovation are easily observable or visible to others.

Many channels of communication can be used to increase awareness of new ideas, including mass media, the internet, networks, and individual communications.

Rogers reports on research showing that most individuals do not use information from scientific studies to determine whether they will adopt an innovation, but will depend on a peer's evaluation and recommendation regarding the advantages of the innovation. Opinion leaders and change agents can be very influential in the process of diffusion of innovations; interpersonal communication channels have been shown to be more effective than mass media to persuade people to adopt new ideas. Research has shown that people are more likely to communicate with individuals who are similar to them in terms of personal and social characteristics (homophily). This is a difficulty in diffusion of innovations as often a change agent is different (heterophilous) from the individuals to whom they are introducing new ideas, leading to difficulties in communication and acceptance of the new idea (Rogers, 2003).

Time is an element in the diffusion theory. Some people will adopt an innovation very quickly, while others observe to see how successful it is before they decide to adopt an innovation. The stages people pass through when considering innovations include knowledge, persuasion, decision, implementation, adoption of the innovation, and confirmation of the innovation decision. People need to be aware of the innovation, learn about it, implement, or try the innovation, and then if this trial is positive, they then move to adopt the innovation (Hubbard & Hayashi, 2003; Rogers, 2003). Reinvention or adaptation of the innovation is likely at the implementation stage. Confirmation occurs when the adopter seeks reinforcement of the decision. The adopter may reverse the adoption decision if exposed to conflicting information about the innovation. Rogers (2003) characterizes people as early adopters, and late adopters; the characteristics of individuals as well as organizations affect the rate of adoption of innovations.

Innovations that are perceived to have greater advantages and compatibility generally have a more rapid rate of adoption depending on the characteristics of the social system. Research has shown that over time, the number of individuals who adopt the innovation increases.

According to Rogers (2003), innovations diffuse within the boundaries of a social system. The structure of the system, norms, roles of opinion leaders, champions, and change agents all affect the innovation decision and diffusion process. Changes in the social system occur because of the decision to adopt or reject the innovation, resulting in consequences, which can be direct or indirect, and anticipated, or unanticipated. According to Rogers, "The structure of a social system can facilitate or impede the diffusion of innovations" (2003, p. 25). Elements that facilitate the initiation of an innovation/diffusion process in an organization include low centralization, high complexity (high knowledge and expertise), low formalization (rules procedures), high interconnectedness, size, and organizational slack (uncommitted resources available) (Hubbard & Hayashi, 2003; Rogers, 2003). However, these same structural characteristics may pose difficulties in implementation (Rogers, 2003, p. 413). LTC homes tend to be characterized by low complexity, high formalization, and low organizational slack.

Rogers (2003) summarizes decades of diffusion research identifying biases, gaps, and suggestions for future research. He identifies that KT research should be multimodal and avoid pro-innovation bias. He recommends that it is helpful to examine the whole process of innovation from development of the innovation, to the decision to implement an innovation, adoption of the change, and sustainability or discontinuance of the

innovation. Rogers briefly addresses the fact that technology has changed the manner in which innovations are diffused, however the effect of technology in communication is really at the end of his life's work, and will need to be addressed at length by researchers in future diffusion studies. Rogers' work is integral to understanding the evolution of KT theory, and useful to conceptualize key factors for consideration in planning and evaluating dissemination projects, as well as research efforts to enrich the KT field.

2.1.3 Conceptual Model for Considering the Elements of Diffusion, Dissemination and Implementation of Innovations

Greenhalgh et al.'s (2004) Conceptual Model for Considering the Elements of Diffusion, Dissemination, and Implementation of Innovations is based on a synthesis of theoretical concepts and research findings from their review of diffusion of service innovations, further to Rogers' (2003) work. The schema is helpful as a memory aide for analysis of complex situations; each element detailed in the schema is based on a systematic review of the literature. The schema provides a comprehensive representation of elements to be considered in diffusion, dissemination, and implementation projects. The model incorporates tenets of Rogers' (2003) theory, and highlights factors that have been identified to influence diffusion, such as communication channels, influence of change agents, networks and linkages between developers and users of the innovation as well as contextual and system considerations helpful to consider throughout the process of implementation of innovations. The model identifies essential elements for consideration; however, it does not guide actions for dissemination projects (Greenhalgh et al., 2004; Kitson et al., 2008).

2.1.4 The PARIHS Framework

The PARIHS Framework (Kitson et al., 2008; Rycroft-Malone, 2004) is a conceptual framework that was developed from research, practice development and quality improvement projects to represent the complexities of the implementation of evidence-based practice. The framework describes successful implementation as a function of the interplay between evidence, context, and facilitation of change. The authors have identified descriptors of each element and sub elements on a continuum, which can be used to examine the factors that might be interacting to affect the change process (Kitson et al., 2008; Rycroft-Malone, 2004). Although the authors state that more research and testing of the PARIHS framework is required, it can be used as a practical tool for measuring the elements and context of a situation, and can assist researchers and clinicians to determine the appropriate type of facilitation required to accomplish the goal of putting research into action (Kitson et al., 2008). This model is consistent with the tenets of Rogers'(2003) theory, in which Rogers' conceptualizes that the rate of diffusion is affected the characteristics of an innovation (evidence), the social nature of diffusion (facilitation), as well as the social system (context) within which an innovation is diffusing. The PARIHS framework is useful for the analysis of factors that contribute to the uptake of research; however, it does not focus specifically on diffusion & dissemination, which are the focus of this research proposal.

2.1.5 The Knowledge to Action Model

The Knowledge to Action (KTA) Model (Figure 2.1) developed by Graham et al. (2006) has been adopted by CIHR as the model for application of research and the KT

Process (CIHR, 2009; Straus, Tetroe & Graham, 2009). The schema assists in the conceptualization of the process for the creation of knowledge and distillation of knowledge into usable formats. The triangle at the centre of the model (Graham & Tetroe, 2007) depicts a funnel representing the flow of information and the synthesis of best practice information into summaries such as best practice guidelines, and knowledge tools or products such as the BP Blogger. The factors to consider in adaptation of knowledge to the local context, assessment of barriers in the local environment or social system, tailoring of information to be disseminated, and other factors such as, monitoring, evaluation and sustainability are included in the dynamic, cyclical depiction of the KTA process. The tenets of this model assist in conceptualizing the process of KT as a planned effort to influence uptake and change practice.

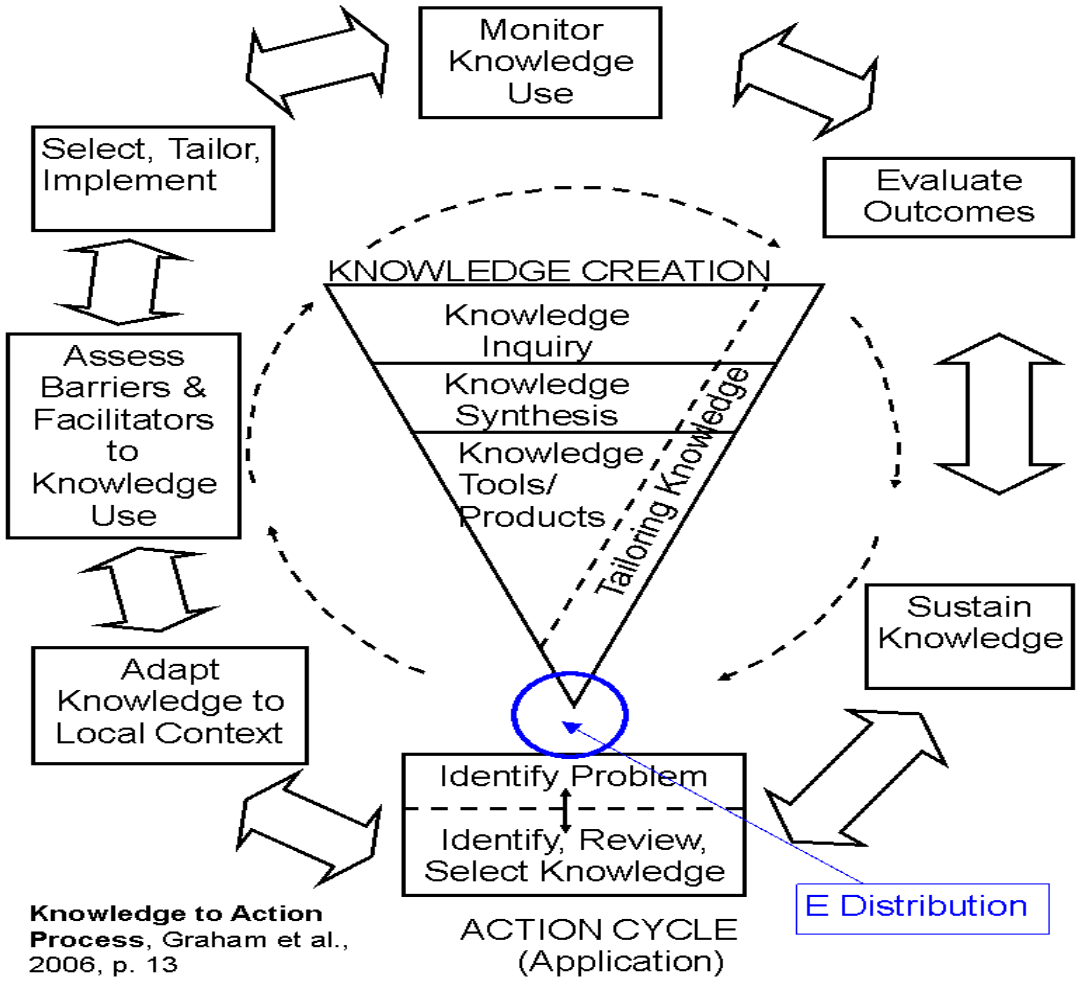

Figure 2.1 Knowledge to Action (KTA) Model Adapted from Graham et al. (2006, p. 13).

The arrow in Figure 2.1 provides a visual representation of where the electronic distribution of the Best Practice Blogger fits into the Knowledge to Action Cycle. According to this model, the BP Blogger is a knowledge product. The thesis primarily focuses on dissemination, the movement of knowledge products from the inner triangle on the model to the outer circle. The KTA model is consistent with Rogers' theory (2003). However, the model does not focus on dissemination.

2.1.6 The Participatory Action Knowledge Translation Model

The Participatory Action Knowledge Translation (PAKT) model was developed inductively by McWilliam, Kothari, Losec, Ward-Griffin, and Forbes (2008) from their review of the literature and experience in KT activities in the home care sector in Southwestern Ontario. According to the authors, "the PAKT framework brings together and inextricably intertwines organizational, team and individual effort in a never-ending cyclical endeavour toward refining evidence-based practice, enabling participants to overcome fragmented, hierarchical bureaucratic functioning in the move toward a learning organization" (McWilliam et al., 2008, p. 239). Leaders are identified within the group process, opinion leaders are selected, and front-line provider ideas for implementation can be identified and implemented. This PAKT framework requires resource allocation and time for the social process. The authors state that the advantage of this approach is that: "Experiences of insight, problem identification, learning and knowledge production, in essence knowledge translation and organizational learning...unfold, ideally overcoming previous practice norms through conscious critical reflection...Diffusion and institutionalization are promoted through the outreach network" (McWilliam et al., 2008, p. 240).

The authors state that this PAKT framework is in its infancy but shows promise in engaging interdisciplinary staff to use evidence in a continuous quality improvement mode, with a transformational leadership process that uses social interaction to evolve processes in an evidence-based direction. In piloting the framework, the authors engaged five interdisciplinary groups who made recommendations for practice changes, and diffusion of practice changes based on evidence. These group members then served as

champions of the change process in the second action cycle with an extended action network of nine groups. In the pilot project, managers were able to address strategic plans, government priorities, and develop action strategies based on research evidence, with outcome measures to accomplish organizational benchmarks, and individual performance indicators (McWilliam et al., 2008).

The PAKT (McWilliam et al., 2008) model builds on Rogers' theory of Diffusion of Innovations (2003) with the emphasis on the social nature of diffusion. The importance of engaging all interdisciplinary team members in discussion of evidence with application to practice is an important strategy to address different educational backgrounds and attitudes. The implication of this model for the proposed research is that the context influences uptake of innovations. The home care sector in which the PAKT model was piloted is similar to the context of LTC homes with respect to the large proportion of unregulated staff. The unregulated staff often feels as if their contribution is not valued, and that their supervisors do not listen to them (Personal Support Worker Workshop, personal communication, March 9, 2011; Erika Hansen, personal communication, March 23, 2011). In the PAKT model, the process of social exchange and discussion provides an opportunity to build trust, understanding, and self-efficacy for addressing professional and power relations, with KT as an essential component of the process. According to Rogers' theory, social channels of communication, champions, personal and organizational characteristics as well as characteristics of the innovation affect diffusion and uptake. This study examined the factors that influence dissemination of the BP Blogger, including whether the format of an electronic newsletter reaches point of care staff. The extent to which processes similar to the PAKT model are developed within

each work setting may influence whether the BP Blogger reaches interdisciplinary staff and unregulated health providers, but the detailed examination of these contextual factors is outside of the scope of this study.

2.1.7 Social Marketing Principles

Health care providers planning and evaluating dissemination projects can benefit from knowledge of social marketing principles and media analysis. Lefebvre and Flora (1988) write about social marketing principles, as well as their application, in their review of two community-based projects entitled the Pawtucket Heart Health Program, and the Stanford Five-City Project. These projects lead them to conclude that "social marketing is an invaluable referent from which to design, implement, evaluate, and manage large-scale, broad-based, behaviour-change focused programs" (Lefebvre & Flora, 1988, p. 300). They encourage health care providers to use marketing concepts to formulate programs that are strategically designed to achieve organizational goals. Lefebvre and Flora (1988, p. 301-309) detail essential parts of the social marketing process that can assist in planning, implementation, and evaluation of dissemination efforts to affect change in public health interventions. These parts can be summarized as follows:

1. consumer orientation
2. exchange theory to conceptualize service delivery
3. audience analysis and segmentation strategies
4. use of formative research in program design and pretesting of intervention materials

5. communication channel analysis, or devising distribution systems and promotional campaigns
6. use of marketing mix concepts in intervention planning and implementation
7. development of a process tracking system
8. management process involving problem analysis, feedback, and control functions.

Lefebvre and Flora (1988) describe several case examples where process tracking assisted in evaluation and adjustment of programs to achieve health changes, and conclude that attention to the above elements could result in programs that reach large numbers of the target audience in a cost-effective manner (Lefebvre & Flora, 1988).

Similar to Lefebvre and Flora's work (1988), Faulkner and Finlay (2006) used a media studies approach to analyze the efficacy of a public health campaign to encourage physical activity. Data were gathered through interviews, focus groups, and from documents. Document analysis and qualitative analyses were used. The authors state that the media analysis approach is useful for evaluation of strategies for dissemination of innovations. It includes four levels of analysis:

1. The inception of the message, and formation of a strategic communication plan
2. Content of the message, source, and its trustworthiness
3. The reach of the media, and
4. Reception and analysis of the social and cultural contexts influencing the meaning audiences construct from the media.

This approach was used to evaluate the physical activity media strategy entitled *Canada on the Move*, using data from interviews, focus groups, and documents. Qualitative textual analysis and a thematic analysis were completed. The findings identified lack of clarity with inception of the message as to whether it was health research or health promotion; however, there was excellent media uptake (Faulkner & Finlay, 2006). Although the press releases were deemed trustworthy by journalists and media, there was some scepticism among focus group participants regarding the link between government and private industry (in this case Kellogg Canada inserted step counters into their cereal and encouraged Canadians to log onto the web-site). Faulkner and Finlay (2006) state that it is important to consider how audiences may decode messages and that there may be some resistance to the intent of the research reported in the media. Faulkner and Finlay (2006) conclude that health providers can learn from the marketing and media analysis literature; the use of these concepts in analysis and evaluation of dissemination efforts in public health, and other dissemination efforts can have a positive effect on planning, implementation and evaluation measures. Rogers' (2003) theory is compatible with the social marketing and media literature. Rogers theorizes that the characteristics of the innovation and channels of communication through social networks affect the diffusion of innovations, which is similar to the media and social marketing literature focus on the content of the messages, communication channels, and social context affecting reception of the message.

The implications of the media analysis approach for the thesis research is that it is important to consider several factors. These include the inception of the BP Blogger, whether the source is perceived of as trustworthy, the reach of the BP Blogger, as well as

the influence of context on the perception and use of the BP Blogger. The developer of the BP Blogger, Ms. van der Horst, used marketing principles in the development process of the newsletter, doing formative research in the design of the newsletter, pretesting with individuals from the target audience. Ms. van der Horst developed a dissemination strategy that included a recognizable title with eye-catching font that would enhance recognition of the source (personal communication, Mary Lou van der Horst, May 4, 2009). Electronic dissemination, from the respected position of the Best Practice Coordinator, and availability of the information online at a reputable web-site enhance its' trustworthiness. This study describes the reach of the newsletter, and reception of the newsletter, as well as the effect of the cultural context, its influence on the meaning the audience takes from the message, and whether they use the information in practice.

2.1.8 Theoretical Models Summary

In summary, the KT models reviewed all have their roots in Rogers' theory of Diffusion of Innovations (2003). The models are specifically for the health care context and elaborate processes, especially processes involved in the implementation of new knowledge. However, they do not substantially add to conceptualization of diffusion and dissemination, which is the focus of this thesis. Therefore, the Diffusion of Innovations (Rogers, 2003) is the most appropriate theoretical model for the thesis research. The following sections describe relevant research about diffusion and dissemination, including in the context of LTC.

2.2 Evidence about Diffusion and Dissemination

This section summarizes evidence from three systematic reviews and one narrative review of research about diffusion and dissemination within the KT process.

Primary research studies were not considered for this literature review because the large number of primary studies is beyond the scope of the thesis and high quality reviews are available.

Greenhalgh et al. (2004) were commissioned by the United Kingdom Department of Health to do a systematic meta-narrative review of the diffusion of service innovations. The review addressed the question of how to spread and sustain innovations in health care delivery. The review process included mapping the historical development of theory, concepts, and methods in each research tradition. Seminal papers, books, and theoretical work were identified and analyzed. The authors describe a rigorous process of identifying literature across disciplines, data extraction, and narrative synthesis. Findings about spread, or dissemination, are relevant to this thesis. Greenhalgh et al. (2004) conceptualize diffusion and dissemination on a continuum:

> The various influences that help spread the innovation can be thought of as lying on a continuum between pure diffusion (in which the spread of innovations is unplanned, informal, decentralized, and largely horizontal or mediated by peers) and active dissemination (in which the spread of innovation is planned, formal, often centralized, and likely to occur more through vertical hierarchies...). (p. 601)

Building on Rogers' publications, Greenhalgh et al. (2004) found that the dominant mechanism for diffusion is interpersonal influence through social networks (p. 601). They identified seven factors that influence dissemination: network structure, homophily, opinion leaders, harnessing the opinion leader's influence, champions, boundary spanners, and formal dissemination programs. Greenhalgh et al. (2004) state that generally physicians operate in horizontal networks which are effective for spreading peer influence, in contrast to nurses who have formal, vertical networks, which are effective to pass on authoritative decisions. These dissemination patterns have

implications for the proposed study. Although the diffusion of the BP Blogger may occur horizontally to colleagues connected by e-mail, the vertical dissemination of information from DRCs in LTC homes to unregulated staff is more of a challenge when unregulated providers in LTC homes are not linked to e-mail.

Expert opinion leaders influence others' beliefs and actions through authority and status, while peer opinion leaders are those who have developed credibility with their colleagues. Greenhalgh et al. (2004) state that it is important to identify the true opinion leaders to harness the influence of these leaders; the decision to disseminate the BP Blogger to all administrators and directors of resident care in LTC homes in Ontario, was made by Mary Lou van der Horst while in the position of Best Practice Coordinator. This decision was to capitalize on the influence of these expert opinion leaders on their colleagues. Their dissemination of the BP Blogger to colleagues, peer opinion leaders, and point of care staff through horizontal and vertical pathways would influence the uptake of best practice information in LTC homes.

Champions, or key individuals who support an innovation, may influence diffusion and adoption of an innovation within an organization. Boundary spanners refer to people who have significant ties within and outside the organization. This helps them be aware of innovations. Greenhalgh et al. (2004) draw on Rogers' (2003) work about the importance of formal dissemination programs, which will be more effective if, they:

> (1) take full account of potential adopters' needs and perspectives, with particular attention to the balance of costs and benefits for them; (2) tailor different strategies to the different demographic, structural, and cultural features of different subgroups; (3) use a message with appropriate style, imagery, metaphors, and so on; (4) identify and use appropriate communication channels; and (5) incorporate rigorous evaluation and monitoring of defined goals and milestones. (Greenhalgh et al., 2004, p. 603)

Greenhalgh et al. (2004) conclude that the meaning of an innovation for an organization, and the "innovation-system fit" (p. 590) may be more useful than the actual properties of the innovation itself. Their review points to the impact of structural determinants on organizational innovativeness. They state that the absorptive capacity of organizations for new knowledge, and their receptive context for change, including leadership, strategic vision, and system readiness for change all affect adoption of innovations, assimilation and routinization.

In his review, Lomas (1993) discusses the interrelationship between information flow, reception of information, and behaviour change. Like Greenhalgh et al. (2004), he notes differences between passive flow of information (diffusion) and active flow of information (dissemination) remarking, "those who receive diffused messages (are) likely already open to and seeking out the message...active seekers in the face of a passive flow of information" (p. 226). He states that if awareness is the goal of the communication, then dissemination is effective; if the goal is more than awareness, then the implications of the message must be highlighted. Identification of barriers, as well as assisting audiences to overcome the barriers to the use of knowledge should be part of the implementation process, and part of the tailored message. He concludes that effective dissemination does not result in physician practice change "without active and coordinated implementation efforts" (Lomas, 1993, p. 230). This is compatible with Rogers' (2003) theory about the complexity of diffusion and dissemination of innovations.

Grimshaw, Eccles and Tetroe (2004) undertook a systematic review of effectiveness and costs of guideline development, dissemination, and implementation

strategies. They evaluated single and multifaceted interventions. Two hundred and thirty five studies reporting 309 comparisons, 73% of which were multifaceted interventions, were included. Single interventions that were evaluated included reminders, dissemination of educational material, educational outreach, as well as audit and feedback. Most interventions showed modest to moderate improvement in care. Although combinations of strategies improved results in some studies, the number of interventions used was not related to effect size. The implications for this study are that dissemination of best practice information in the format of the BP Blogger may have some effect on attitudes, knowledge, or practice. It was important to determine the pathway of the BP Blogger, or the channel of communication and social networks affecting the dissemination, as theorized by Rogers (2003), to determine if the BP Blogger was reaching point of care staff in LTC homes.

Ellis et al. (2005) conducted a review of reviews and a systematic review of primary studies evaluating diffusion and dissemination of cancer control interventions. Forty-one systematic reviews and 30 primary studies were identified through searches of multiple databases and by an expert panel. A meta-analysis was not performed because of the differences in study designs, measures, methodological quality, and data reporting. Studies were included about many active dissemination strategies as well as passive dissemination. The passive dissemination of materials appeared to have no effect on professionals' behaviour; strategies often had an effect on knowledge but not on behaviour. The authors concluded, "no strong evidence currently exists to recommend any one dissemination strategy as effective in promoting the uptake of cancer control interventions" (Ellis et al., 2005, p. 497).

Taken together, these reviews indicate that many factors affect the dissemination and uptake of innovations. There is limited evidence regarding what kinds of KT strategies are effective in particular health care contexts, such as LTC. The study of the BP Blogger fills a gap in the study of KT in the context of LTC.

2.3 Evidence about Printed Educational Materials

The BP Blogger falls in the KT strategy category of printed education materials. Printed educational materials are widely used passive dissemination strategies. This section reviews systematic reviews and primary research studies about printed education materials. This research was identified through an extensive search of the CINAHL and Medline databases. Primary research was selected based on similarity to the BP Blogger strategy or context.

Farmer et al.'s (2009) Cochrane review examined the effects of printed educational materials on professional practice and health care outcomes. They searched several databases and included relevant studies that evaluated the impact of printed educational materials on practice and patient outcomes. The review included twenty-three studies.

Farmer et al. (2009) concluded that there is limited research describing characteristics of printed educational materials that influence practice. Studies have shown that materials compatible with clinician values have been associated with greater compliance, and in general, educational interventions "need to be sufficiently persuasive, informative, and relevant to the learner" (Farmer, et al., p. 3).

The authors cite a systematic review that compared passive dissemination of information to no active intervention, finding a small effect on professional practice

(Freemantle, 1997, as cited in Farmer et al., 2009). Farmer et al.'s (2009) conclusions regarding printed educational materials are "when used alone (they) may have a beneficial effect on process outcomes but not on patient outcomes" (p. 2). Examples of process outcomes include clinician knowledge, attitudes, and skills. The authors state that there is not enough evidence to know what context, circumstances or characteristics of printed educational materials make them more effective, however:

> studies have found that passive dissemination of national guidelines did have a positive impact on clinical practice when the context was conducive to change. Given that PEM (printed educational materials) are familiar, accessible, inexpensive, convenient to use and may lead to improvements in care, they could be a cost-effective intervention within healthcare settings. (Farmer et al., p. 3)

Farmer et al. (2009) suggest that future studies of printed educational materials could benefit from the guidance of persuasive communication theories. These theories suggest efficacy of message is dependent on the interplay of the variables of source, channel, message, receiver, and destination, as well as the frequency of exposure to the message. The authors suggest future studies should consider economic evaluation of costs and benefits of printed educational material, as well as studying the efficacy of different characteristics, and the value of adding printed educational materials to multifaceted interventions (Farmer et al., 2009). The implications of this systematic review are that the BP Blogger is a virtual printed educational material when distributed electronically, but it can be printed as a hard copy for distribution. This study provides information on the efficacy of a strategy to disseminate best practice information in a flexible format that is not costly.

Hubbard and Mulvey (2003) report on their retrospective evaluation of the dissemination of Treatment Improvement Protocols (TIPs) by the Center for Substance

Abuse Treatment in the United States. Rogers' Theory of Diffusion of Innovations (2003) provided the conceptual framework for the study. The study evaluated awareness, attitudes towards TIPs, and how the TIPs are used in practice. Across the nation, four thousand two hundred facility directors, clinical supervisors and program counsellors in treatment programs that were state-recognized, and 57 Single State Agency Directors were surveyed using a mailed survey (electronic option) and telephone follow up. Wave 1 Questionnaires asked questions about awareness, knowledge, attitudes, and use of 28 TIPs, as well as whether respondents found a specific TIP useful. The response rate was 77% (n=3267). Prior to the survey, of the 3267 respondents, all the directors were aware of the TIP series, but only 49.6 % of facility directors, 45.4% of clinical supervisors, and 38.5 % of program counsellors were aware of the TIPs, indicating the diminishing awareness of the existence of the TIPs the closer the health care provider was to the point of care. Wave 2 included 1028 participants who responded to specific evaluation questions about TIPs regarding content and presentation, dissemination of the TIPs to others, and how they used the TIPs for individual as well as organizational use (Hubbard & Mulvey, 2003).

Informal conversations with peers was most often reported as the source of learning about treatment developments (Hubbard & Mulvey, 2003). This use of social networks in KT is consistent with Rogers Theory of Diffusion of Innovations (Greenhalgh et al., 2004; Rogers, 2003) as well as the findings in the nursing literature in community and LTC (Janes et al., 2008; Thompson, McCaughan, Cullum, Sheldon, & Raynor, 2005). Other sources of learning identified in the study were "journals, newsletters, or other professional publications; participation in training sessions,

seminars, workshops, or technical assistance (TA); and/or attendance at conferences or meetings of professional or provider associations" (Hubbard & Mulvey, 2003, p. 60). Wave 2 surveys identified specific features recommended to enhance uptake of TIPs, including brevity, format, print, compatibility with existing organizational considerations, cultural sensitivity and current evidence based content, which again are consistent with the tenets of Rogers' theory (2003).

Hubbard and Mulvey (2003) conclude that if TIPs are to be used in practice, information needs to be current, condensed, easy to read, and culturally sensitive, as well as include information about how to implement the recommendations. The authors also state that capitalizing on interpersonal channels and opinion leaders would improve awareness, as this is one of the most reported ways that treatment professionals share information.

The TIPs that were evaluated by Hubbard and Mulvey (2003) are similar in nature to the BP Bloggers, which are the focus of this proposed study. The BP Bloggers are best practice topic summaries, and are disseminated from a central, respected source. Hubbard and Mulvey's strategy to use the tenets of Rogers' Theory (2003) to develop their evaluation questions will be used in the proposed evaluation of the BP Blogger.

Dormuth et al. (2004) measured the impact of a series of evidence-based drug therapy letters on the prescribing practice of 499 physicians in British Columbia. They used a paired, cluster-randomized design. The intervention was an evidence-based series of 12 Therapeutics Letters. Physicians in the control group were sent the letters three to eight months after the physicians in the intervention group. The authors found that no single Therapeutics Letter had a statistically significant effect on its own. However,

overall, there were statistically significant changes in prescribing practices. They concluded that ”The combined effect of an ongoing series of printed letters distributed from a credible and trusted source can have a clinically significant effect on prescribing to newly treated patients” (Dormuth et al., p. 1057). The authors state that further research is needed to determine characteristics of the message and the message recipients that lead to changes. This study is relevant to evaluation of the BP Blogger. The context and target population are different; however, the strategy for dissemination is similar. To date, 27 BP Bloggers have been disseminated, from a respected, source. The study describes factors affecting awareness, and uptake of the evidence-based electronic newsletter in LTC.

Aken (1993) reports on a strategy to post information for employees at a Birth Centre in Edmonds Washington. She posted a one-page newsletter entitled “The Milkline” every two weeks in the staff bathrooms, a common area that staff in three departments all frequented. Positive feedback has been received about the approach, including reports that nurses read the material and held informal group discussions about the topics; used the material in teaching students; discussed the information with physicians when selecting treatments for clients; and provided the information to family members for decision-making. There is no report of a formal evaluation. However, based on the feedback received, the author states that the posting of the newsletter in a place where staff is a captive audience appears to assist in getting new information to staff (Aken, 1993). This is consistent with Rogers’ emphasis on the importance of communication and social networks. Aken’s report has implications for the study of the BP Blogger. As many point of care staff do not have access to e-mail in LTC, a strategy

such as posting the BP Blogger in a visible area, may have similar effects to posting the Milkline. This study evaluates dissemination and uptake of the BP Blogger in a purposively chosen LTC home A description will be obtained from participants as to their awareness of the newsletter, the KT strategy that was identified to bring the newsletter to their awareness (electronic, print, posting, and meeting) and how they make use of the information.

Oerman, Floyd, Galvin and Roop (2006) describe a strategy to disseminate research findings in the form of brief reports developed from systematic reviews. The brief reports summarize essential points of research evidence in language that is easy to comprehend. They are electronically disseminated. The authors recommend use of brief reports to disseminate information; a format that is understandable engages staff and improves awareness and attitudes to research that could be useful in practice. They provide an example of a brief report developed from a systematic review published in the Cochrane Database of Systematic Reviews, as well as a template for development of brief reports. They recommend dissemination by e-mail, hospital intranet, or a web-site designated for communicating research results to nurses as well as newsletter or flyers and incorporating research findings into discussions, educational sessions, clinical information systems, and evidence-based journals. They suggest that the use of this type of dissemination would improve attitudes toward research and increase awareness of practice relevant research. However, they do not report on any evaluation of the efficacy of the use of brief reports in a clinical setting. The BP Bloggers are an example of information disseminated as recommended by Oerman et al. (2006). This study fills a gap

in the literature regarding the evaluation of the efficacy of this approach in the context of LTC.

In summary, printed educational materials are an inexpensive method of getting best practice information to care providers, and have been shown to have an effect on process outcomes such as knowledge, and attitudes of health care providers, with small effects on practice, especially if the context is conducive to change (Farmer et al. 2009). Repeated mailings from a respected source (Dormuth et al., 2004), marketing, channels, as well as the format, brevity, content, cultural sensitivity (Hubbard & Mulvey, 2003) and compatibility with existing values, all appear to affect the uptake of the information in printed educational materials. There is no conclusive research to state what characteristics of printed educational materials, context, or circumstances make them more effective (Farmer et al., 2009).

2.4 Knowledge Translation in Long Term Care

According to Rogers (2003), innovativeness in organizations is related to variables such as individual characteristics (attitudes to change), centralization of organizations, complexity (high knowledge and expertise), formalization (rules and procedures), interconnectedness (interpersonal network linkages) including the use of champions, organizational slack (uncommitted resources), size of an organization, and system openness to ideas. Logan and Graham (1998) state that within health care, the practice environment exerts a powerful influence on practitioners. Factors such as decision-making structure, rules, regulations, policies, physical environment, workload, availability of resources and supplies as well as the system of incentives all influence research use, as well as social and patient influences (Logan & Graham, 1998). It is

important to understand the environment of LTC, the context and barriers to research use when examining the factors that may influence the uptake of evidence such as the BP Blogger. There is relatively little published research about KT in LTC. This section reviews published descriptions and evaluations of traditional KT approaches in LTC and web-based or web-facilitated KT in LTC.

2.4.1 Evidence about Traditional KT Approaches in LTC

Aylward et al. (2003) examined the effectiveness of continuing education programs in LTC homes. Forty-eight studies were identified for the literature review from bibliographic databases, manual journal and bibliography searches, and key informants. The authors stress the need for LTC to develop the capability of staff to meet the needs of their complex residents. Citing Broad (1997), they point to evidence that-30% of training is transferred to ongoing practice; this is in line with the average effect of 10% change in main target outcomes in Grol and Grimshaw's (2003) review of KT intervention strategies in medical practice.

Aylward et al. (2003) conclude that there is a lack of rigorous research regarding efficacy of educational initiatives in LTC and that organizational and system factors are rarely considered. Factors that make it difficult to conduct evaluation research in LTC are noted, including high staff turnover, workload, and non-participation of facilities in research because of staffing issues. Aylward et al. describe organizational and system factors that affect application of knowledge in LTC; it is a setting that has a large proportion of unregulated health care providers; less emphasis on research utilization than acute care; and a wide range of abilities, learning styles, education levels, and cultures among staff. Their review found studies measured staff knowledge or behaviour

after educational initiatives, however there was a lack of follow up evaluations to assess whether new learning was applied over time. In fact, some studies showed a change in attitude but not in behaviour. Reviewed studies showed short-term changes, but there was limited evidence for sustained KT.

Aylward et al. (2003) state that successful implementation strategies should include organizational and system changes to support the staff. They cite Schnelle et al. (1998) in stating that organizations should be studied to determine if they could manage any proposed interventions. It is important to establish an organization's capability to absorb and support innovations prior to embarking on educational initiatives. Often organizations request education but may not have the knowledge, expertise, or structure of staff in place to implement changes, leading to a failure in the educational or best practice initiative. Greenhalgh et al. (2004) describe this concept as "absorptive capacity" and state that:

> An organization that is systematically able to identify, capture, interpret, share, reframe, and recodify new knowledge, to link it with its own existing knowledge base, and to put it to appropriate use will be better able to assimilate innovations, especially those that include technologies. (p. 606)

Berta et al. (2005), in their article *The Contingencies of Organizational Learning in Long Term Care: Factors that Affect Innovation Adoption*, propose fourteen testable propositions relating to factors at the policy, organizational, guideline, individual and environmental level affecting adoption and sustainability of innovations in LTC. The authors applied theoretical frameworks of knowledge transfer, organizational learning, and information from studies of guideline implementation to develop their model of innovation adoption in LTC facilities. They hypothesize that Clinical Practice Guidelines

(CPGs) are more likely to be successfully implemented if the knowledge is explicit, there is a clear causal link to positive resident outcomes, and if there are clinical leaders who value guidelines, have prior experience and self efficacy in leading best practice implementation. They also hypothesize that implementation of CPGs may be more successful in facilities that are larger, chain owned, have structures that support replication of innovation processes, have a higher proportion of registered staff, and when implementation is reinforced by regulation (Berta et al., 2005).

Berta et al. (2005) suggest that clinicians who produce guidelines need to be aware of writing explicitly for KT to occur, and that policy implementation enhances guideline implementation. Furthermore, to facilitate KT, managers can enhance structures; hire skilled staff; promote team buy-in, collaboration, and engagement in the process of implementation; and emphasize the benefits of implementing best practices. The BP Blogger as a knowledge product can fulfill a role of providing evidence based information that can be used to influence policy and address information needs of the point of care staff. Evaluation of its pathway and perceptions of usability, which, according to Rogers' (2003) theory, enhance dissemination and uptake, provides information regarding the role of the BP Blogger as a knowledge product.

Royle et al. (2002) conducted a study to determine the information needs for clinical and managerial decision making in LTC. Two sites were selected, one a Community Care Access Centre (CCAC) that links services to clients in their home, and one LTC home, both located in Hamilton, Ontario. Staff was selected in discussion with management of the two sites. All staff in the community agency were selected to participate with the exception of clerical and maintenance staff. At the LTC home,

managers and staff from two units were included in the sample. A descriptive quantitative questionnaire and qualitative focus group methods were used to gather data on computer literacy, computer use at work and at home, information sought, with what frequency, what resources were used, what information was required for decision making, as well as what education staff needed to access and retrieve information (Royle, et al., 2002). Staff reported difficulty finding information in a timely manner. The most important source of information identified by both the CCAC and LTC home, were "printed resources, other workers, and supervisors" (Royle et al., 2002, p. 202). These findings that people are important sources of information is consistent with Rogers' (2003) theory of Diffusion of Innovations, and supported in later work in acute care (Thompson et al., 2005) and LTC (Janes et al., 2008).

Royle et al. (2002) found that in the community agency 88% of staff used a computer at the office, and 77% at home, 86% identifying the use of e-mail at work, and 21% reported internet use at work (Royle et al.). There was a substantial difference in computer use at the LTC home, where 15% used a computer at work and 43% at home, only 3% used e-mail at work, and only 4% used the internet at work (Royle et al.). Staff identified the lack of time and skills for searching to be a constraint to access information. Staff in both settings identified the need for more resources including people, computer resources, and printed resources; managers in the LTC home thought that "Information needed to be presented to staff at a level and in a format they understood" (p. 200).

Royle et al. (2002) identify the unique challenges of introducing evidence-based practice in LTC. This environment has fewer financial resources than acute care, fewer

libraries and computerized resources, they have fewer staff with research expertise, lack research and education committees, and questions that are of interest to workers in LTC may not attract funding. There are also more unregulated health care providers in the LTC environment whose native tongue is not English, providing special challenges in education and knowledge translation. The authors also found that the health care aides, who made up the majority of the staff in the LTC homes, did not perceive information seeking as part of their role, while nurses "used 'just in time' resources such as expert knowledge and reference materials to help them make clinical decisions about particular patients" (p. 196). Royle et al. concluded that organizations must take responsibility to provide current information, integrate the use of evidence into policy, and find ways to disseminate information to enhance evidence based practice in LTC.

Although there is increasing use of computers for assessment and documentation in LTC, the gap in computer use at LTC homes identified in Royle et al.'s study (2002) persists to this day. Not only is time to use a computer a barrier, there are less computers in LTC homes than in acute care settings and unregulated health providers in many LTC homes do not have access to computers (personal observation, March, 2011). Royle et al.'s work points to the importance of having current evidence based information accessible to LTC staff in the form of printed resources. The BP Blogger is one method of providing evidence-based information to point of care staff in electronic or printed form.

Janes et al. (2008) describe a grounded theory study that explored the process of the use of knowledge about person-centered care by 20 unregulated health care providers in Ontario LTC homes. The theory "Figuring it Out in the Moment" describes

unregulated care providers' knowledge utilization in dementia care settings. Participants engaged in information seeking about person centred care and their residents, to develop their interventions. Knowledge sources included personal experience, team sharing, and resident observation. Their decision-making was influenced by determining what practice option was feasible considering environmental and human resources, and they attempted to choose options to facilitate the delivery of care, which would meet the least resistance from residents. They would then trial approaches, and Janes et al. describe "Figuring it Out" (p. 17) as the process in which staff engaged in decision making and problem solving at each encounter with residents. Janes et al. found that "A distinct characteristic of participants' decision making was their reliance on human sources of knowledge (i.e. team sharing)" (2008, p. 20). This is consistent with Rogers' Theory of Diffusion of Innovations (2003) as well as the research by Thompson et al. (2005). Participants' process of knowledge utilization was also enhanced with collaborative relationships or teamwork, opportunities to share information, inclusion in multidisciplinary discussion, and recognition of work to enhance motivation to strive to do the best for their residents.

Janes et al.'s (2008) work supports the importance of the role of social relationships in KT as described by Rogers (2003), as well as the leadership's role in recognizing gaps in knowledge, skills, and attitudes of staff. This study is of relevance to the thesis research; managers and leaders need best practice information at their fingertips to share with unregulated health providers who rely heavily on human sources of knowledge. According to Rogers (2003), leaders can act as champions, and change agents disseminating innovations, and persuading contacts to adopt innovations. The

synthesis of evidence based practice information in the BP Blogger is a potentially useful format for obtaining and sharing information with staff and families to inform practice.

The workshops entitled *Putting the P.I.E.C.E.S. Together* were spearheaded by the Ministry of Health And Long Term Care in Ontario as part of Ontario's Strategy for Alzheimer's Disease and Related Dementias. They disseminated best practice information regarding geriatric mental health assessment and the use of standardized assessment tools in LTC. Staff from more than 500 LTC facilities across Ontario participated in these workshops to develop skills and act as champions for geriatric mental health assessment and management. McAiney and colleagues conducted evaluation of P.I.E.C.E.S. through questionnaires, telephone interviews, and follow-up surveys, measuring confidence levels of staff, and completion of homework assignments (McAiney, 2003, 2004; McAiney & Service, 2005; McAiney & Stolee, 2005). The authors state that LTC facilities' report of success of the P.I.E.C.E.S. training initiative were attributed to:

> a number of factors including management support,...willingness to provide necessary resources...and to utilize resources made available to facilities, availability of more than one P.I.E.C.E.S. trained staff within the home, staff willingness to access and value their In-house PRP (educated staff), PRC (psychogeriatric resource consultant) and physician support, and the transfer of knowledge from P.I.E.C.E.S. trained staff to front-line workers. (McAiney & Stolee, 2005, p. 22)

Time and staffing issues (McAiney & Stolee, 2005) were the barriers most often identified as the challenge to implementing the learning. The turnover of staff and shortages of registered staff limited facilities abilities to send staff to training. Lack of mentoring, networking, and support from peers, and minimal assistance from the Psychogeriatric Resource Consultant were also identified as challenges.

Administrators reported increased collaboration, better assessments and linkages, fewer crises, and better management of behaviour, which they attributed to the training initiative (McAiney & Stolee, 2005). As noted by the authors, self-reports and surveys may have been biased, as administrators may have been reluctant to report to the Ministry of Health and Long Term Care that they did not utilize the persons trained in a fully funded Ministry initiative to their full capacity as this may reflect poorly on their managerial skills.

Rogers' theory Diffusion of Innovations (2003) highlights the importance of the social process for the diffusion of innovations. The choice of opinion leaders to be trained in P.I.E.C.E.S. to act as in house resources and champions is a community development approach that capitalizes on the social process to diffuse best practices. The same challenges that affect the implementation of the P.I.E.C.E.S. initiative in the context of LTC including time, shortages of staff, lack of mentoring and specialty resources, can be factors that affect the dissemination of the BP Blogger and its' use in LTC. LTC homes with established P.I.E.C.E.S. champions could be key people to disseminate best practice information such as found in the BP Bloggers. This research will describe the dissemination pathway of the BP Blogger, the awareness and uptake of the newsletter by point of care staff.

The workshops entitled *U-First* were developed as part of the Ministry of Health and Long Term Care's Alzheimer Strategy (Alzheimer Society of Ontario, 2007). These workshops were tailored to meet the educational needs of Personal Support Workers (PSWs) and Health Care Aides (HCAs) to enhance their understanding of the complex geriatric client and their responsibilities in reporting, interacting with clients and families,

and working collaboratively as a team with other health care providers. An evaluation of the impact of U-First on LTC homes and community agencies was conducted in the fall of 2007. Four hundred and fifty LTC homes and community agencies whose staff attended a U-First training were contacted by phone with 196 respondents from LTC and 150 from the community. The respondents were asked open-ended questions to determine if there were any noted practice changes, or changes in the frequency of reporting aggressive behaviour on incident reports. The key findings in LTC were an increase in awareness of causes of behaviour (indicated by 48%). Situations were being handled better, with enhanced dialogue, teamwork, and change in attitudes as well as decreased stress in working with complex elderly (indicated by 25%). There was a decrease in the reporting of aggressive behaviour (indicated by 28%); and increased reporting of symptoms due to increased knowledge of caregivers. Other responses included comments that time constraints prevent practical application of knowledge, and that refreshers would be helpful (Alzheimer Society of Ontario, 2007).

The Registered Nurses Association of Ontario has developed Best Practice Guidelines to disseminate evidence into practice. Implementation of the guidelines in acute, community, and LTC home settings was evaluated in a before-after design using quantitative and qualitative data (Ploeg, Davies, Edwards, Gifford, & Miller, 2007). Thematic analysis of facilitators and barriers was conducted for data from semi-structured telephone interviews of 59 administrators, 58 staff, and 8 project leaders at 22 organizations. The authors found that individual factors, organizational, and environmental context affect implementation, and that leadership support is necessary for

guideline implementation. They recommended that any implementation strategies should address barriers, and be tailored to different target audiences and stakeholders.
Ploeg et al. (2007) found that costs and corporate commitment were also associated with successful practice guideline implementation. LTC homes faced challenges with tailoring information and delivering education to meet the needs of interprofessional staff. LTC settings were not analyzed separately but the authors noted, "Some participants from LTC settings described the high proportion of unregulated workers and low funding levels as implementation challenges" (Ploeg et al., 2007, p. 216). The BP Blogger was designed to meet information needs of point of care staff with low cost. Description of dissemination is needed to understand whether similar knowledge products may be effective in the unique environment of LTC.

Gentle Persuasive Approaches full day workshops are a method to enhance knowledge and skills of interdisciplinary caregivers in LTC to deliver respectful care to clients with dementia (Advanced Gerontological Education, 2011). An evaluation of a pilot program with the participation of seven LTC Homes in Ontario with 205 participants, included evaluations pre & post training, and at six months, as well as key informant interviews. There were statistically significant increases in self-perceived competency, and positive attitudes (Advanced Gerontological Education, 2011).

Other initiatives to enhance best practices in LTC include funding the role of the Psychogeriatric Resource Consultants (PRCs) in Ontario. The PRCs often function as change agents, opinion leaders, or knowledge brokers when called in to assist with a practice issue or implementation project. The importance of the social nature of diffusion (Rogers, 2003) helps to explain the success of the PRC role. McAiney (2004), completed

an evaluation of the PRC role as part of the evaluation of the Alzheimer Strategy. Four hundred and thirty nine of 555 Ontario LTC facilities (79.1%) responded to a survey about the role of the PRC. LTC homes appreciated the supportive role of the PRC in education, consultation, and assistance with complex residents. However, some facilities reported lack of knowledge of the role as well as limited access to PRCs. The PRCs are part of what Rogers (2003) refers to as the social system through which innovations diffuse over time. They are included in Mary Lou van der Horst's distribution list and may influence the diffusion of the BP Bloggers.

Calleson, Sloane, and Cohen (2006) evaluated the dissemination of an educational CD-ROM/video program that was developed to educate nurses regarding research-based techniques for diminishing responsive behaviour during bathing. They did presentations, media announcements as well as creating a web-site and mailing out the materials to 15,453 nursing homes in the United States, and as other recipients including the state ombudsmen, policy makers, assisted living facilities and home care providers. The evaluation included surveys to determine dissemination and awareness of the resources, tracking web-site use, content use, tracking of registration and examinations embedded in continuing education credits, as well as ratings of the content and quality of the CD-ROM and video. Anonymous surveys were distributed to 114 nursing home administrators to reach a representative sample of nursing homes in three randomly selected states.

Of the administrators surveyed, forty five percent were aware of having received the material, and a large number of nurses (639) as well as nursing assistants (215), and 143 facility administrators viewed the resources and completed the CD-ROM training modules for continuing education credit (Calleson et al., 2006). Two thousand, five

hundred and fifty two nursing assistants received credits for viewing the educational video. The authors state that the greatest challenge in the study was to determine whether the facilities had received the mailed resources, and in what capacity they would be used. Over half (55%) of the administrators reported that they either did not receive or were unaware of whether they received the resources, although anecdotally, the researchers learned that administrators later located the resources that had been stored but not viewed. Those that did use the material in group activities and for continuing education credits rated the material highly for quality and usefulness (Calleson et al., 2006). Calleson et al. (2006) state that although short-term outcomes of the dissemination project were favourable, "effective practice change requires more than education. Indeed, interventions such as continuing education and mailings....are often considered 'weak' in terms of their potential to bring about lasting behaviour change" (p. 78). This study has implications for the evaluation of the dissemination of the BP Blogger. The BP Blogger study reports on awareness of the electronic newsletter, and web-site tracking for a one month period will determine numbers of people accessing the newsletter who are actively seeking information. According to Rogers' (2003) theory, attitudes, towards an innovation will influence dissemination and use. The study will report participants' awareness, perceptions, and use of the Blogger.

Bostrom, Wallin, and Nordstrom (2006) carried out a study in Sweden with health care providers engaged in the care of older people, to determine use of research findings in daily practice. Their study focused on staff attitudes towards research, availability, and support for implementation of research findings, barriers, and facilitators regarding research use, and differences among professional groups. Questionnaires were sent to 132

staff working in seven units of older person care and 89 people responded (67%), 63 of whom were enrolled nurses (EN), or nurses' aides (NA). In this study, the majority of nurses' aides stated:

> *do not know* on many items concerning attitudes towards research, support for research utilization, and actual use of research...despite positive attitudes towards research, the majority of staff did not use research findings in daily practice. This was particularly valid for the EN/NA group. (Bostrom et al., 2006, p. 131)

The context for the study of research utilization in Sweden is similar to the context of LTC in Ontario. The staffing ratios for older care in Sweden are similar to LTC in Ontario (Bostrom et al., 2006; Sharkey, 2008). One can anticipate that the unregulated providers in Ontario with minimal educational preparation and low literacy levels (Aylward et al., 2003) may have similar attitudes and knowledge about research compared to the unregulated providers in Sweden.

Barriers to research utilization identified by nurses in the study by Bostrom et al. (2006), most often were time limitations. Barriers identified by nurses' aides were factors such as workload pressure; insufficient staff resources; their job description did not include research; and lack of authority to change practice. Frequent education sessions, and computerized network of research findings at the work place were perceived as facilitators of research use. Research & development departments, dedicated time for research activities and support from management were also reported facilitators of research use. Nurses aides reported less access to research findings compared to registered staff, and the authors reported "a shortage of research-related resources both material and human" compared to acute care (Bostrom et al., p. 136). These results are similar to those reported in Royle et al.'s (2002) study of information use in LTC in

Hamilton Ontario. Bostrom et al. (2006) recommended that managers develop strategies to engage and involve all staff including the EN/NA group in discussions of evidence-based practice to enhance awareness and implementation of evidence based care. The BP Blogger could be a stimulus for discussion of evidence.

In summary, little has been published regarding KT in LTC homes. The LTC home environment is highly formalized, with few slack resources; LTC is not as well funded as acute care, with time and human resource shortages. There is less of a focus on research in LTC, and a large proportion of the staff are unregulated providers with varying education levels, ethno-cultural backgrounds, and literacy levels (Aylward et al., 2003; Ploeg et al., 2007; Royle et al., 2002). Many unregulated providers do not have access to online resources or e-mail in their work settings. There is a lack of time to search for information and, notably, studies have shown that LTC staff most often obtains their information from other colleagues, pointing to the social process involved in KT (Janes et al., 2008; Royle et al., 2002). Examples of KT efforts in LTC include guideline dissemination, workshops to train peer opinion leaders, the use of Best Practice Coordinators and consultants, as well as workshops to train staff. Studies have shown that individual, environmental and contextual factors affect KT, and that many efforts to do traditional continuing education have had process effects, but no lasting change on practice in LTC (Aylward et al., 2003). The next section focuses on methods of technology assisted KT.

2.4.2 Web-Based & Web-Facilitated Knowledge Translation Methods in LTC

This section summarizes information about electronic and web-based or web-facilitated KT methods in LTC. This information is relevant to the thesis research because many strategies to deliver education that are being developed make use of technology to enhance ease of access to information and because the BP Blogger is disseminated via email. Examples include webinars, meetings of Communities of Practice through the Seniors Health Research Transfer Network, and the Alzheimer Knowledge Exchange, the Ontario Telemedicine Network, as well as on-line courses. As stated previously, many unregulated health care providers, the largest proportion of health care staff in LTC homes, do not have access to e-mail or the internet in their workplaces. Therefore, educators, managers or other professional staff would mediate internet delivered education.

Brazil, Royle, Montemuro, Blythe, and Church (2004) describe the creation of a Long-Term Care Best Practice Resource Centre (LTCBPRC) based on the results of an assessment of 15 LTC organizations' need for information resources. A pilot program with two LTC organizations over 12 months was evaluated. The program provided staff with access to research, a librarian, resources, and assistance with critical appraisal of literature. Quantitative data included frequency of use of the service and participant evaluation of helpfulness of the information. Key informant interviews and focus groups were also conducted. Information requests from staff in the LTC home and the community resulted in 220 documents, including books and videos, being provided to those making requests (Brazil et al., 2004). Education sessions by the librarian were

perceived as useful, enhancing participants' information seeing skills and computer literacy.

The evaluation also highlighted different literacy, computer literacy, and skill levels of the staff, as well as barriers to computer and internet access for point of care staff. Sharing of resources between facilities and staff was important to reduce costs and increase accessibility (Brazil et al., 2004). Currently, this Resource Centre is funded through the Seniors Health Research Transfer Network (SHRTN), providing assistance to LTC organizations across Local Health Integrated Network (LHIN) 4 in Ontario.

Online programs have been studied as options for KT in LTC. MacDonald, Stodel, and Casimiro (2006) report on their design, development, delivery, and evaluation of an online 8-week dementia care program for healthcare teams in continuing care and LTC. It was offered to six facilities from three Canadian provinces in French and English. It included discussion forums, e-mail, and chat. Ninety-five learners enrolled in the program, and 76.8% of the participants completed it. Quantitative and qualitative data were collected, including surveys, telephone interviews, program records such as postings and e-mails and e-mail interviews. There were no evaluations of client outcomes, or evaluation of practice change beyond self-reports.

The evaluations pointed to the social nature of learning in online education. The importance of social connection (Rogers, 2003) was identified to be important in technologically facilitated KT. Learners enjoyed the interactive nature of activities. They appreciated the support of co-participants, the on-line facilitator, and their management (MacDonald et al., 2006). Time, workload and shift work still were cited as barriers. The

learners had difficulty getting together with team members to do the required exercises to facilitate their learning.

Knowledge exchange networks such as the Ontario Seniors Health Research Transfer Network (SHRTN) and the Alzheimer's Knowledge Exchange (AKE) also provide education to the LTC sector and others working with the elderly with use of the web-sites, librarians, webinars, and Communities of Practice. However, electronic access is a barrier for unregulated health care providers in the workplace. A case study evaluation of a Community of Practice activity supported by SHRTN included interviews, e-mail, and e-mail survey data (Conklin & Stolee, 2008). The evaluators found that they were "limited in ability to track transmission of information to the frontlines" (Conklin & Stolee, 2008, p. 121). The evaluators state that "SHRTN and the COP provide a supportive context, but continued active facilitation of knowledge exchange is necessary at the point of care....as the facilitative role will have little or no impact on practice change if exchanges are limited to the COP level and are restricted to research-based evidence" (Conklin & Stolee, 2008, p. 122). Conklin and Stolee identified the challenge of tracking transmission of information to the front line, which is relevant to the thesis research. A LTC home was purposively chosen to engage point of care staff in the research, to obtain information regarding the reach of the newsletter, perceptions and use of the BP Blogger by point of care staff in LTC.

The ConsultGeriRN.org web-site of the Hartford Institute of Geriatric Nursing (New York University College of Nursing, 2008) provides many knowledge products. The *Try This* ® series on the web-site includes 2 page summaries of evidence on particular topics, demonstration-streaming videos, and accompanying articles in the

American Journal of Nursing to encourage the use of best practices in nurses working with older adults (New York University College of Nursing, 2008). Although the *Try This*® series is a very popular site there are no "specific data evaluating the dissemination/use/frequency of use of the resource" (personal communication, Malvina Kluger, Oct. 19, 2010).

There are many electronic resources to support information needs of health professionals. However, they require some computer searching skills (Wardell, 2005).

> Supporting infrastructure like web-sites and newsletters can augment interactive efforts; though not replace them, particularly if the material provides targeted information to clearly identified audiences or more general information in a searchable form, when an intervention or event generates a demand for this information. (Lavis, Robertson, Woodside, McLeod, & Abelson, 2003, p. 227)

In summary, in LTC the use of technological means to meet information needs of staff is a challenge because of varying education, literacy, computer skills and access to e-mail and the internet. Very few LTC homes have on site educators, or technological support. Many institutions have firewalls within their systems, or lack up to date systems, which can prevent transmission of educational information and limit access to web-sites. However, many LTC unregulated health providers do not have access to e-mail or the internet in their workplaces unless it is mediated by educators, professional colleagues, or managers. This lack of access to electronic information in the workplace is an example of the "digital divide" described by Rogers (2003, p. 468); the gap between people who have an advantage if they are connected to the internet and have more access to information, versus those who are not connected. Evaluation of on-line education in LTC identified barriers of time, workload, and shift work, while emphasizing the importance of the social process in KT; the participants enjoyed discussions and assistance of the on-

line facilitator and management (McDonald et al., 2006). Evaluation of on-line network educational activities identified difficulty in tracking whether information made its' way to frontline staff (Conklin & Stolee, 2008).

2.5 Relevance of Research Findings and Theory to BP Blogger in LTC

Rogers' (2003) theory provides a framework for analysis of the diffusion of the BP Blogger in LTC and for the design of the thesis research. The BP Blogger was specifically developed according to the tenets of Rogers' theory to have attributes to enhance its' adoption in LTC (van der Horst & Buckley, 2007). Credibility of the BP Bloggers may be enhanced because they come from a respected source (a former RNAO Best Practice Coordinator) with a wide network of social connections in the LTC community. The newsletter contains information that is compatible with the values of using best practice information. The format is a short synthesis of best practices with chunks of information that are easily readable, trialable, and if put into practice, the effects would be observable.

The BP Bloggers are posted on the web-site of the Regional Geriatric Program central (http://www.rgpc.ca/resource/), and the main communication channel used to distribute the newsletters is through e-mail. This format makes it very easy to pass on information in an efficient manner to nursing and allied health staff; however, it is not possible in all LTC homes to use this channel of communication to reach unregulated health professionals, the largest proportion of staff in LTC homes (Sharkey, 2008). The channels of communication to reach the majority of workers in LTC homes, would be from managers [who receive electronic copies of the BP Blogger but may not have time to read their emails (personal communication, Elizabeth Calvert March 4, 2011), to

unregulated health workers. The unregulated workers generally receive information through personal communication, case conferences, meetings, workshops, or information that is posted or delivered in printed format.

KT research indicates that designing brief, simple, culturally sensitive, and relevant messages that are compatible with organizational values should enhance dissemination and uptake of messages. The repeated dissemination of printed educational materials from a respected source has shown small effects on practice change within the physician community (Dormuth et al., 2004). By the time the BP Blogger reaches point of care staff, it is printed. It is an example of repeated dissemination from a respected source. This is an inexpensive KT strategy, but there has not been enough research to determine what type of message, what format, or context leads to success of dissemination and uptake of the message (Farmer et al., 2009).

Various educational strategies in LTC have not shown a lasting effect on practice. Technologically facilitated communication of information and education is on the rise, with webinars, telemedicine, and communities of practice supported through government funded agencies; it is difficult to evaluate the effect of these strategies, and whether the information reaches the point of care staff (Conklin & Stolee, 2008). It is important to include point of care staff in the thesis research.

Rogers (2003) identifies that people make decisions about adopting innovations through social contact with their peers. Research with unregulated health professionals in LTC homes (Janes et al., 2008) has verified the importance of social contact in KT. The social system within LTC homes, through which innovations are communicated, includes administrators, directors of care, registered nurses, unregulated health providers,

multidisciplinary team, clients, families, family councils. Opinion leaders and champions in LTC homes would include the managers, Best Practice Coordinators, Psychogeriatric Resource Consultants, Nurse Practitioners, and educators. These individuals may have characteristics that help or hinder transfer of information in LTC, as they may be homophilous or heterophilous. In today's technological world, social contact includes communication through electronic means, the method of disseminating the BP Blogger. The context of LTC includes high complexity of care, higher patient to staff ratios than in acute care, and high number of unregulated providers combined with a dearth of advanced practice nurses, lack of emphasis on research, and limited access to electronic information. As well, morale in LTC homes is often poor, and it is difficult to change practice (Ken Rockwood, personal communication, Sept. 28, 2010, Nadine Janes, personal communication, Oct. 7, 2010).

In LTC, innovations in practice are communicated through clinical practice guidelines, conferences, mandatory educational sessions, in-house workshops, and contact with consultants and specialist practitioners. Trade journals and peer reviewed journals as well as communications from professional colleges are another channel of communication of best practices for registered health professionals. Electronic channels of communication of newsletters, webinars, and educational events on the Ontario Telemedicine Network are methods that are being used more frequently to reach staff in LTC. The BP Blogger is an example of electronic communication of information.

There is increasing access to computers in LTC for registered staff, and a select few LTC homes are piloting the use of equipment and participation in webinars for the Ontario Telemedicine Network in Long Term Care (personal communication, Patrick

Shanahan, Sept. 9, 2010). Social marketing principles are of use in health care to ensure information for dissemination is designed for specific target audiences, with the use of channels, marketing and dissemination strategies to enhance the reach. Tracking messages as well as evaluation of the reception of messages and context are recommended in the social marketing literature to evaluate efficacy of strategies (Lefebvre & Flora, 1988; Faulkner & Finlay, 2006). These principles are of interest for this proposal to determine the pathway and uptake of the BP Blogger, the focus of the thesis proposal.

2.6 Research Questions

The research questions for the thesis research are:

1. What is the dissemination pathway of the BP Blogger in Long Term Care?
2. Does the BP Blogger reach the point of care staff?
3. How is the BP Blogger perceived by people who receive it?
4. How is the BP Blogger used in practice?

Rogers' (2003) diffusion theory identifies that innovations are diffused through social channels, over time. Prior to adopting an innovation, individuals need to be aware of the innovation. Their perceptions of the innovation (relative advantage, compatibility, complexity, observability, and trialability) affect whether they adopt the innovation in practice, and the speed of diffusion to others. This study examined the pathway (communication channels) of the BP Blogger in LTC homes. The research examined the extent to which the electronic distribution of the BP Blogger reaches regulated and unregulated health care providers in LTC homes, staff members' awareness of the BP Blogger, as well as perceptions of the BP Bloggers' attributes that may influence

adoption and use in LTC homes. The term point of care staff is used to refer to respondents who described themselves as direct care, including unregulated health care providers, registered nurses, or allied health care providers.

Figure 2.2, illustrates the links between the research questions, the pathway of dissemination of the BP Blogger, and the factors that may affect the dissemination of the BP Blogger according to Rogers' (2003) theory. On the left hand side of Figure 2.2, the research questions are articulated in bold writing. Each research question is in its own box, positioned to reflect the evaluation of the pathway, and questions pertinent along the path. The words that are in bold writing indicate links between the research question and Rogers' theory. The flow of the newsletter is depicted in the central column labeled the *Dissemination Pathway of the BP Blogger*. Red arrows indicate the dissemination pathway of the BP Blogger. The boxes on the right hand side are labeled with the tenets from Rogers' theory that affect diffusion of innovations. Blue arrows indicate the possible contextual factors that affect dissemination and uptake of the BP Bloggers in LTC. Communication channels, individual, and organizational characteristics, as well attributes of the innovation affect dissemination and uptake. People need to be aware of innovations (knowledge) to be able to use them. Characteristics of innovations (perceptions of the innovation) influence whether innovations are disseminated and used in practice. According to Rogers' theory, dissemination and uptake of innovations is enhanced if they are perceived to be less complex, offer an advantage, are compatible with values, trialable, and observable. The proposed research will describe the pathway (red arrows) as well as factors that affect the dissemination pathway and uptake of the BP Blogger (blue arrows).

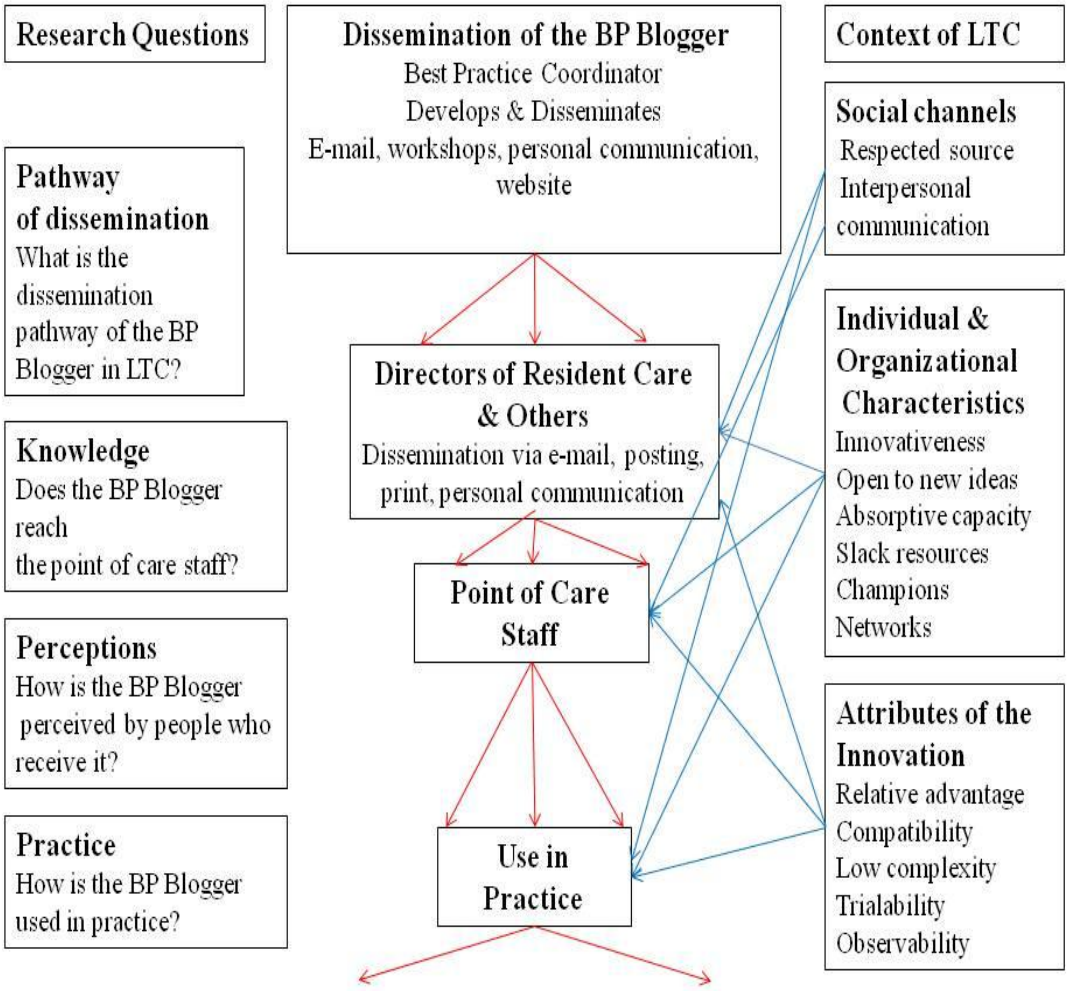

Figure 2.2 Blogger Dissemination, Research Questions, and Rogers' Theory

2.7 Summary

This chapter described Roger's (2003) theory of diffusion of innovations, compared it to other KT models, and explained the rational for using Rogers' theory in the thesis research. Research about diffusion and dissemination was reviewed, including a review of the limited amount of research about KT in the context of LTC. Relevance of the research and theory to the BP Blogger was described. Finally, the research questions were presented along with an explanation of the link between the research questions and

Rogers' theory. Methods to answer these questions are presented in the following chapter.

Chapter 3

Methodology

The purpose of this retrospective, descriptive study was to examine the dissemination of the BP Blogger. The study documents the dissemination of the newsletter in LTC, examines factors affecting awareness, perceptions of the tool, channels of communication, and the use of the BP Blogger in practice. Rogers' (2003) Diffusion of Innovations Theory was used to design the study and develop the questionnaire. The sampling and analysis took into account the "social system" of LTC where point of care staff has limited access to internet and email dissemination of the BP Blogger. Study design, sampling strategy, data collection, questionnaires, analysis, and ethics are detailed in this chapter.

3.1 Descriptive Study Design

A descriptive study was appropriate to answer this study's research questions. "The purpose of descriptive studies is to observe, describe, and document aspects of a situation as it naturally occurs and sometimes to serve as a starting point of hypothesis generation or theory development" (Polit & Beck, 2004, p. 192). Descriptive studies play an integral part in knowledge expansion that begins with a documentation of the phenomenon, and together with correlational and experimental research contribute to development of effective interventions as well as development of descriptive theory (Polit & Beck, 2004). Descriptive studies use quantitative methods, qualitative methods, or both. Quantitative descriptive methods were primarily used to describe data from telephone interviews, web-site monitoring, and a census survey. There was a small qualitative component. Content analysis is reported from open-ended questions on the

questionnaire. Current and retrospective data were gathered. Dillman, Smyth, and Christian's (2009) method for sampling, questionnaire design, and methods to increase response rate were used for this research.

Three methods of data collection were used to describe the dissemination pathway. The trail of dissemination from Mary Lou van der Horst's distribution list and the RGP central web-site was examined with an electronic questionnaire and web-site monitoring. Additional data collection was completed with a telephone questionnaire of Directors of Resident Care in LTC in Local Health Integration Network (LHIN) 4[1]. This LHIN was selected for the survey because the author of the BP Blogger had worked in the position of the RNAO LTC Best Practice Coordinator in LHIN 4. Therefore, LHIN 4 was most likely to have the highest awareness of the BP Blogger. It was also possible to compile an accurate list of facilities from the Community Care Access web-site (Community Care Access Centre, 2011) and to contact the Directors of Care at minimal cost.

To access end-users directly, a LTC home identified to have high use, and uptake of the BP Blogger was chosen to participate in the survey. All staff from this LTC home were invited to complete a print questionnaire. This approach was designed to reduce coverage error (Dillman et al., 2009). The print questionnaire gave point of care staff an

[1] LHINs are geographically determined not for profit corporations that work with local health organizations to plan services for the population. LHIN 4 encompasses Brant, Burlington, Haldimand, Hamilton, Niagara and Norfolk (Haldimand Niagara Hamilton Brant Local Health Integrated Network, 2011).

opportunity to contribute to the evaluation of the BP Blogger. This population would not otherwise have had an opportunity to participate in the survey, as many point of care staff do not have e-mail access at work in LTC. The mixed modes (electronic, print, and telephone) of data gathering were used to increase sample size and reduce coverage error (Dillman et al., 2009).

3.2 Measures

Rogers' (2003) model provided the theoretical framework to develop the survey instrument to answer the research questions: 1. *What is the dissemination pathway of the BP Blogger in Long Term Care?* (Social channels of communication) *2. Does the BP Blogger reach the point of care staff*? (Awareness & knowledge of the BP Blogger, knowledge stage in adoption of innovations) *3. How is the BP Blogger perceived by people who receive it?* (Perceptions towards the BP Blogger, relative advantage, complexity, trialability, compatibility with values, observable) *4. How is the BP Blogger used in practice*? (Uptake of the innovation). The web-based questionnaire and telephone / paper questionnaire are provided in Appendix B and C respectively. The links between the questionnaire, Rogers' theoretical tenets (2003) and the research questions are detailed in Appendix D. For example, to fully describe the dissemination pathway, questions were included about awareness and receipt of the BP Blogger. Questions addressed how participants receive and pass on the BP Blogger, and factors that theoretically affect the spread of innovations such as barriers to access, and participants preferred means of receiving information.

The questionnaire was designed using a unified mode construction: "The goal is to find a common ground such that the meaning of the question stays the same regardless

of what mode is used so that items are measured equivalently across modes" (Dillman et al., 2009, p. 326). Dillman et al. describe ways people may react differently depending on the survey mode (e.g., in person, web, or print). Using more than one mode within a study may reduce coverage error and non-response error. It may also introduce measurement error, if people respond differently depending on the survey mode. For example, people may respond differently because characteristics of different modes may influence responses. Dillman et al. state that the factors affecting why respondents provide different responses to different modes are the interviewer presence, aural versus visual communication, and differences in question construction of the different modes. Preference for one mode over another may also be linked to other differences. For example, those who prefer to do a survey in an electronic format may differ in other ways to those who prefer telephone surveys.

This study attempted to minimize measurement error with the design of one questionnaire used for all modes (electronic, telephone, and paper), with consistent instructions and response categories. The unified mode construction provided a common mental stimulus, word construction, as well as consistent response categories across modes. Dillman et al.'s (2009) recommendations were used for the survey design to make the questionnaire appear interesting and socially important. As suggested by Dillman et al., question ordering and construction was done carefully to reduce non-response error: "Good question design helps encourage all respondents to read and process questions and their component parts completely and in the prescribed order, and it minimizes the influence of one question on the measurement of subsequent items" (p. 156). The questionnaire was brief, with simple language, instructions, and response tasks. For

example, questions that required the respondent to choose between the responses of "excellent", "good", "fair", and "poor", appeared in the same order each time.

The web-based, telephone, and print modes, all had a skip out option after the first two questions, which asked about awareness, and whether the participant had read or browsed any of BP Bloggers (Appendix B & C). If the respondent had no awareness, or had not read any of the BP Bloggers, they were instructed to proceed to the demographic questions. The only differences in the survey between modes were a few questions, as detailed in Table 3.1.

Table 3.1

Differences in Content of Questionnaire by Survey Mode

Survey Mode	Basic Questionnaire	Additional Questions
Census Survey	√	What province are you from? What country are you from? From whom did you receive this survey request, Mary Lou van der Horst, or someone else?
Web-site Pop-up	√	What province are you from? What country are you from?
Telephone Questionnaire for Directors of Resident Care, LHIN 4	√	
Print Questionnaire, LTC home	√	How long have you been employed at (the LTC home)?

In the census survey, there were 3 additional questions, regarding what province, and what country the respondent was from, as well as a question asking from whom they received the survey request. The questionnaires accessed from the web-site pop up request linked to the web-based questionnaire identical to the census survey, except for the question about who the participant received the survey from. These responses were

tracked with a unique URL in Survey Monkey. The telephone questionnaire for the Directors of Resident Care was identical to the print questionnaire for the LTC home point of care staff, except for one question regarding length of employment in LTC, which was included for the participants from LTC home only (Appendix C).

The questionnaire was examined for readability statistics in "Microsoft Word's '97-2003" program. The Flesch Reading Ease was 76.6, and Flesch-Kincaid Grade Level was 5.1. Feedback about the readability of the questionnaire was obtained from a Director of Resident Care, and an unregulated health care provider whose first language was French, as well as colleagues familiar with the BP Blogger. They were asked to review the questionnaire in the presence of the researcher, going through each question for comprehension and ease of response. Suggested changes to the questionnaire were reviewed with the thesis supervisor prior to implementation. The electronic questionnaire (Appendix B) was pretested by the researcher and advisor to determine if there were any glitches in the electronic programming, visual display, or character settings.

3.3 Sampling Strategy

3.3.1 Census Survey & Snowball Sampling

Census survey and snowball sampling were used to obtain information from people who receive the BP Blogger by email, either directly from Mary Lou van der Horst or indirectly by emails forwarded from people on her distribution list. A census survey is "A survey covering the entire population" (Polit & Beck, 2004, p. 713). Snowball sampling, a method to select participants through referral from other participants (Polit & Beck, 2004), was used to follow the path of the BP Blogger from Ms. van der Horst's original distribution list. At the time of the study, the author of the

BP Blogger had approximately 30 people on the electronic dissemination list for the BP Blogger (personal communication, Mary Lou van der Horst, Dec. 2, 2011). The e-mail request for participation in the study with the link to the survey was sent to this distribution list. Upon completion of the survey, participants in the electronic survey were asked to forward the survey to whomever they usually disseminated the BP Blogger.

3.3.2 Web-site Monitoring

The Regional Geriatric Program central (RGPc) web-site was monitored for a one month time period for the number of times people accessed the BP Bloggers, as well as the number of people who accessed multiple BP Bloggers to provide information regarding the dissemination of the BP Blogger from this web-site. A pop up survey request was designed to appear on the RGPc web site when a visitor accessed the BP Blogger, between April 16, 2012, and May 14th, 2012. The researchers wished to capture the opinions of the web site visitors, as these respondents were more likely to be seeking information, as opposed to passive recipients of the dissemination who receive the BP Blogger by email or at work and may have different opinions than the participants from the other samples. The web-site responses were tracked with a different URL coding on SurveyMonkey (2011) to allow for separate analysis.

3.3.3 Telephone questionnaire for LHIN 4 Directors of Resident Care

Dillman et al. state that "all survey modes face challenges and that none alone may be sufficient for getting adequate responses" (2009, p. 13). To enhance response rates and reduce non-response bias as recommended by Dillman et al. (2009), several options were considered. Options were to survey all LTC homes in Ontario; to survey a random sample of LTC homes in Ontario; or to survey all LTC homes in a region within

Ontario. A decision was made to survey all of the Directors of Care of LTC homes in the LHIN 4 Region by telephone, as these LTC homes would be the most likely to have a personal connection with Mary Lou van der Horst because of her past position as the RNAO Best Practice Coordinator. They would be most likely to receive the BP Blogger, and it was feasible to contact them. The telephone questionnaire was designed to reduce coverage error if LTC Directors of Resident Care were not on the e-mail distribution list.

The sample of Directors of Resident Care from LTC homes in LHIN 4 was a convenience sample (Polit & Beck, 2004). There are 86 LTC homes in LHIN 4. Information regarding all LTC homes in LHIN 4, including names of the homes, addresses, and phone numbers are accessible on the internet (Community Care Access Centre (CCAC), Hamilton Niagara Haldimand Brant, 2012).

An accurate list of Directors of Care and their phone extensions was developed with the assistance of Psychogeriatric Resource Consultant colleagues of the researcher. The proximity of the LTC homes in LHIN 4 to St. Catharines minimized costs for conducting telephone questionnaires. The information obtained from this sample may not be generalizable outside of LHIN 4, but information gathered from other modes of the survey with electronic dissemination from Mary Lou van der Horst's distribution list for the BP Blogger, reached participants located outside of LHIN 4 for their feedback on the newsletter.

3.3.4 Print Questionnaire for Point of Care Staff

The study design included a questionnaire in print format for point of care staff in one LTC home sample to reduce coverage error:

> Coverage error occurs when not all members of the population have a known, nonzero chance of being included in the sample for the survey and when those who are excluded are different from those who are included on measures of interest. Coverage error can occur because the choice of survey mode may not provide adequate coverage of the population, as is the case with Internet surveys where a significant number of people in many populations do not have access to the Internet. (Dillman et al., 2009, p. 17)

Point of care staff refers to direct care providers, including unregulated health care providers, nurses, or allied health. Many of the point of care staff, including unregulated health care providers that make up the largest complement of health care providers in LTC (Sharkey, 2008), would be excluded from a web-based questionnaire, as they do not have access to external email at work. A study that did not include point of care staff because of lack of access to e-mail would result in coverage error.

Purposive sampling was used to select one LTC home to have point of care staff participate in completing a print version of the questionnaire:

> Purposive sampling or judgmental sampling is based on the belief that researchers' knowledge about the population can be used to handpick sample members. Researchers may decide purposively to select subjects judged to be typical of the population or particularly knowledgeable about the issues under study. (Polit & Beck, 2004, p. 294)

Mary Lou van der Horst provided contact names from LTC homes in LHIN 4 that were familiar with the BP Blogger from its' inception. Elaine Calvert, the current RNAO Best Practice Coordinator in LHIN 4 also provided a list of LTC homes in LHIN 4 where there was high awareness and uptake of the BP Blogger, where management had been receptive to the BP Blogger and had disseminated it to point of care staff. The researcher approached Directors of Resident Care on the list of LTC homes to obtain a site for participation in the study. When one LTC home was unable to participate, the next home on the list was contacted until a LTC home agreed to be a host site for the

research. The site that agreed to host the research for point of care staff reviewed the research request, and the home's Continuous Quality Improvement/Professional Advisory Committee approved the BP Blogger survey proposal (Appendix E).

3.4 Ethics

Ethical guidelines regarding respect for human dignity, informed consent, vulnerable persons, privacy and confidentiality, justice and inclusiveness, balancing harms and benefits, minimizing harm and maximizing benefits are outlined in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (CIHR, NSERC & SSHRC Tri-Council Panel of Research Ethics, 2011). These guidelines have been followed in the development of the study design, informed consent, consideration of harm and benefit, and maximizing benefit with a view to publication of results of findings, presenting at conferences, and use of the information in clinical practice. Clearance was received from the Brock Research Ethics Board (REB) (File # 11-192-McCleary).

Pre-notices and letters of invitation, with ethics information, and contact information for the researcher and her supervisor were developed. The principal researcher works as a Psychogeriatric Resource Consultant in LTC homes; this employment enhances comprehension of the issues, challenges, and context of health care in the LTC sector.

Research assistants were hired from the Brock University student body to conduct the interviews with the DRCs. They were given training and completed the Tri-Council Policy Statement(TCPS), TCPS 2 Tutorial Course on Research Ethics (CORE) (Government of Canada, 2013) prior to engaging with participants and conducting

telephone interviews. For the telephone surveys, a script was developed for the research assistants to explain the research, ethics approval, and confidentiality. The data gathered was kept confidential, and the names of participants or institutions for which they work will not be identified in the report of the study. Names entered into the draws as an incentive for participation in the study were separated from the results of the surveys, and not used for any other purpose.

3.5 Data Collection Procedures

Dillman et al.'s (2009) tailored design method was used to enhance survey response. As described:

> tailored design is a scientific approach to conducting sample surveys with a focus on reducing the four sources of survey error – coverage, sampling, nonresponse, and measurement (Groves, 1989) – that may undermine the quality of the information collected. Second, the tailored design method involves developing a set of survey procedures (including the contact letters or e-mails to respondents and the questionnaire) that interact and work together to encourage all people in the sample to respond to the survey...Finally, tailoring is about developing survey procedures that build positive social exchange and encourage response by taking into consideration elements such as survey sponsorship, the nature of the survey population and variations within it, and the content of the survey questions among other things. (p. 16)

Data collection methods designed to reduce sampling error, and tailored to the population of health care providers in LTC are summarized in Table 3.2.

Table 3. 2

Data Collection Procedure

Mode of Data Collection	Sample	Procedures
Electronic web-based questionnaire	Census survey of electronic distribution list held by Mary Lou van der Horst, with snowball sampling of people who receive the BP Blogger from those on her list.	Day 1: Pre-notice of Survey with the link to the electronic questionnaire (Appendix F) was sent out by e-mail from Mary Lou van der Horst to the distribution list (30 people) with the release of the 26th edition of the BP Blogger (May 14, 2012). Day 7: Letter of invitation (Appendix G) was sent by Mary Lou van der Horst to the distribution list. An electronic link to the questionnaire was provided. The link opened to a letter of information (Appendix H) with information about the study and ethics approval. Participants were asked to complete the questionnaire and to forward the invitation to participate in the survey to those whom the recipient usually passes on the BP Blogger (May 21, 2012) Day 21: A thank you for participation, as well as reminder invitation with link to the electronic questionnaire (Appendix I) was sent to the distribution list for one more stimulus to participate in the study (June 4th, 2012).
Web-site monitoring & pop up request to participate in the survey	Cumulative data & census survey of web-site users accessing the BP Blogger on the Regional Geriatric Program central web-site	Day 1: Web-site monitoring initiated for 1 month (April 16th, 2012 to May 14, 2012). A pop up request to participate in the survey was activated whenever a web-site visitor accessed the BP Blogger on-line (Appendix J). A link to the information letter (Appendix H) and web-based questionnaire (Appendix B) was provided in the pop up request. The web-site administrator monitored the number of times a BP Blogger was accessed, and whether there were single or multiple downloads by the individuals accessing the BP Blogger during the month time frame. The number of people who linked to the web-site pop up survey was monitored.

Telephone survey questionnaire	Convenience sample: Directors of Care in LTC homes in LHIN 4	Day 1: A pre-notice (Appendix K) regarding the study was mailed to Directors of LTC in LHIN 4 (week of April 16-20, 2012) informing them that they would be contacted via telephone by a research assistant. Four Research Assistants were trained in telephone etiquette, procedures for calling Directors of Resident Care, and documenting results. The Research Assistants all completed the, TCPS 2 Tutorial Course on Research Ethics (CORE), from the Government of Canada (2011) as part of their training. Day 4- 7: Telephone contacts were initiated with Directors of Resident Care by Research Assistants the week of April 23-27-May 7, 2012. The Research Assistants used a telephone script (Appendix L) to guide the call. DRCs were given the option of completing the questionnaire on line (Appendix M), with one e-mail reminder if they requested this option to participate in the survey (Appendix N) Contacts were repeated with up to 10 telephone calls to request participation in the survey. Example: research assistants were instructed to attempt calls in the morning and afternoon of each day of the week for 1 week. One research assistant summarized the data regarding response rates by region of LHIN 4, to maintain confidentiality of respondents.
Print questionnaire in LTC home	Purposive sampling: Point of care staff in 1 LTC Home in LHIN 4 Criteria for choice of the LTC home was high use of the BP Blogger	Following approval from the thesis committee, the researcher contacted LTC homes on a list (provided by Mary Lou van der Horst and Elaine Calvert), where there was a high uptake of the BP Blogger. Homes were contacted one by one until consent (Appendix E) was obtained from one LTC home to act as a site for the study. At an in-person follow-up meeting with the Director of Resident Care (DRC) & Assistant DRC, a decision was made to notify the staff about the research by posting flyers (Appendix O), and sending a pre-notice in the facility's weekly newsletter (Appendix P) April 20, 2012. The DRC

	provided a complete list of staff for development of unique identifying numbers to track returns. Day 1: Print questionnaires (Appendix C) were distributed to all staff employed at the LTC Home (April 26, 2012) with an invitation letter (Appendix Q) to participate in the survey. A stamped addressed envelope was provided for returns of the questionnaire to the researcher. Day 28: Reminder letters (Appendix R) with replacement questionnaire and stamped addressed envelope for return were distributed to staff who had not returned the questionnaire as indicated on the tracking sheet developed for all of the LTC home employees on May 7th, 2012.

As an incentive to participate, an opportunity to enter a draw was offered in exchange for participation in the survey. According to social exchange theory, incentives should enhance participation (Dillman et al., 2009). A fifty-dollar gift certificate to Chapters was offered to participants in the electronic, web-site, and Director of Resident Care survey modes respectively. The LTC home incentive, as negotiated with the Director of Resident Care was the opportunity to enter a draw for a day off with pay. This incentive was the customary practice for this LTC home in quality improvement activities such as Health and Safety initiatives.

3.5.1 Electronic Web-based Questionnaire

Social exchange theory was applied to the design of the e-mail letter of request, questionnaire, and procedures. According to Dillman et al. (2009), ways of increasing response are to appeal to helping tendencies, emphasize the benefits of response, the importance of participation, show positive regard, and verbal appreciation, as well as support values. Other strategies include providing an incentive, or token of appreciation

in advance; making the questionnaire confidential, interesting, visually appealing, easy to respond to; and forwarding the survey from an authoritative source.

Multiple contacts in multiple modes of delivery are recommended to increase the response rate (e.g., pre-notices, letters, post cards, telephone follow up and thank you notes). Up to five contacts are recommended. Multiple modes of delivery were not possible for Ms. van der Horst's email distribution list. The benefits of enhanced response from reminders needed to be weighed against the possible negative effects of repeated requests to health care staff that are busy and may be irritated by repeated requests (Dillman et al., 2009). In all there were three contacts made regarding the study from Ms. van der Horst to her original distribution list of thirty people for the BP Blogger. This strategy of electronic survey distribution matched the mode of distribution of the BP Blogger. It is possible that there were some DRCs who responded to the email survey, as well as the telephone survey for the DRCs described below (section 3.5.3), resulting in some overlap between the responses. The category of DRC was not tracked in the demographic data regarding current role. There were no responses to the category "other" in response to the question asking about current role that would indicate if a respondent was a DRC.

Respondents on Ms. van der Horst's distribution list who received the invitation to participate in the research would recognize the respected source, and not mistakenly delete the email thinking it was spam. A pre-notice (Appendix F), was timed to be released with the 26th edition of the BP Blogger, which was sent out on May 14th, 2012. There was a link to the survey provided in the pre-notice if recipients of the e-mail wished to complete the questionnaire at that time.

The invitation to participate in the study was disseminated by Ms. van der Horst one week following the pre-notice, on May 21st, 2012, The subject line for the e-mail was designed to enhance response: *Response Requested: BP Blogger Survey.* The e-mail invitation (Appendix G) was polite and brief, requested assistance, and stressed the importance of participation in the research. There was a link to the electronic survey in the body of the e-mail so that the questionnaire was easy to access. The electronic link to the questionnaire opened to a letter (Appendix H) that described the study, and provided information about ethics and researcher contact information. Upon completion of the questionnaire, participants were asked if they wished to participate in a draw, and asked to forward the invitation to participate in the study, to whomever they usually disseminated the BP Blogger. Two weeks later on June 4th, 2012 there was one reminder request (Appendix I) sent by Mary Lou van der Horst on behalf of the researcher. As recommended by Dillman et al. (2009), it was slightly different in content to the initial message. The subject line for the second e-mail was, *BP Blogger: Please help us with your opinion*. The procedure for undeliverable e-mail was for Mary Lou van der Horst to follow her usual process of dissemination and follow up.

Field-testing of the electronic questionnaire was done prior to going live with the survey. The thesis supervisor and researcher linked to the questionnaire from an email, and completed the questionnaire to double check on potential difficulties with completion. Early returns were evaluated to address any difficulties with the survey in a timely manner. Dillman et al. (2009) recommend monitoring of early-completed surveys, or partially completed surveys to identify whether there are a number of respondents that drop out at a certain question. For instance, character limits on answer boxes that trigger

errors may cause difficulties in survey completion (Dillman et al., 2009). Monitoring the early surveys allowed the opportunity for the researcher to recognize and correct any problems with the questionnaire format.

The responses for the electronic questionnaire disseminated by Mary Lou van der Horst were tracked by unique URLs for this mode of data gathering from SurveyMonkey (2011) to allow for analysis of responses from this mode. The census survey of Ms. van der Horst's original email distribution list of thirty recipients, with subsequent snowball sampling yielded 114 respondents to the web-based questionnaire.

3.5.2 Web-site Download Monitoring and Pop-up request

The researcher worked with the Regional Geriatric Program central web-site managers to track data regarding the number of web-site visitors who accessed a single or multiple page view of the BP Blogger. The number who downloaded a BP Blogger and the number who clicked on the pop-up request for the time period of one month, from April 16-May 14, 2012 were also tracked. The web-site manager installed a pop up request (Appendix J) for participation in the survey designed to appear whenever a web-site visitor accessed the BP Blogger, with a link to the questionnaire. The request included the information about the opportunity to enter a draw for a $50.00 gift certificate to Chapters. The web-site visitor would not be prevented from accessing the BP Blogger, but a request to fill out the brief survey, with a link to the information letter (Appendix H) and questionnaire (Appendix B) appeared when the visitor accessed a page view of the BP Blogger. This questionnaire was identical to the questionnaire used for participants recruited from Ms. van der Horst's distribution list minus the question from whom they received the request to participate in the survey. The responses from the web-site were

tracked with a Survey Monkey URL different from the electronic survey disseminated to Mary Lou van der Horst's dissemination list, and DRC electronic survey, to allow for analysis of responses from different modes. Please see Table 3.3 for a summary of the data gathered from the web-site monitoring. Of the 10 people who responded to the pop-up request, one completed Q. 1 & 2, and then used skip logic to proceed to Q. 25, 3 completed the survey, and 6 answered Q. 1 & 2 only. These six responses were removed from the database for the purposes of analysis of responses to the survey.

Table 3.3

Web-site Monitoring Data

RGP web-site Monitoring April. 16-May 14, 2012	# of visitors who clicked on the web-site pop-up & Survey Link	# of visitors who accessed a single page view	# of visitors who accessed multiple page views	# of visitors who downloaded a BP Blogger
# of web-site Visitors	9 clicks on the Pop-up	56	22	55

3.5.3 Directors of Resident Care (DRCs) Telephone Questionnaire

A current list of all LTC homes in LHIN 4 was obtained on line from the Hamilton Niagara Haldimand Brant CCAC Web Site-Long Term Care Home Directory (Community Care Access Centre, 2012). A list of all DRCs and their contact information was compiled by contacting colleagues in the role of Psychogeriatric Resource Consultant who held current lists. Dillman et al., (2009, p. 23) recommend personalizing contacts and sending pre-notice letters to build anticipation, influence people's decision to participate, and improve response rates. Pre-notice letters are recommended instead of post cards. As explained:

> It takes perhaps 20 seconds to get an event into long-term memory. A postcard can be looked at, flipped over, and laid aside in only a few seconds. A letter takes longer to open and can contain more trust-inducing elements such as letterhead stationery, personalized address, and blue ink signature to help define the survey as important. (2009, p. 246)

A brief pre-notice letter of information (Appendix K), personally addressed to the DRCs was sent to each LTC home in LHIN 4 the week of April 16-20th, 2012, timed to arrive a few days to one week prior to phone contact from a research assistant. The return address was that of the primary researcher, Ann Tassonyi, care of Brock University, Department of Nursing. The pre-notice letter informed the DRC that they would receive a phone call within a week from a research assistant to request participation in the evaluation of the BP Blogger, and that their assistance in participating in a 5-10 minute telephone survey would be greatly appreciated. They were informed of the chance to enter a draw (to enhance the value of the social exchange).

The use of telephone surveys for DRCs in LTC homes was designed to enhance the response rate from this population of very busy professionals who may respond to a telephone request, but may delete or ignore an email request to participate in an electronic survey. DRCs receive an overwhelming number of emails (Elaine Calvert, personal communication, March 11, 2011) and it is a challenge to manage their workload with staffing and resources that are less than that of acute care.

Four Research Assistants (undergraduate students) were hired and trained in the procedure for contacting respondents, and administering the telephone survey. The training was developed and delivered by the researcher and thesis advisor, Ann Tassonyi, and Dr. McCleary. Training included completion of the online Tutorial for the CIHR, NSERC & SSHRC, Tri-Council Policy Statement, Ethical Conduct for Research

Involving Humans (TCPS), TCPS 2 Tutorial Course on Research Ethics (CORE). The research assistants were given information about the study, trained in telephone etiquette, reviewed a script for the telephone contacts and procedures for tracking attempts and the results of contacts. The research assistants were given a list of DRCs in LHIN 4 with corresponding identification numbers for use on the questionnaires and for tracking contacts. They used office space and phones in the Department of Nursing, Brock University so that call display showed a respected source of contact. Telephone calls were made at a time of day that avoided shift change and lunch hour time frames. Research Assistants were instructed to make up to 10 attempts to contact each DRC; for example for the period of one week the research assistant might make one call in the morning, and one in the afternoon to each DRC in LHIN 4, for a total of 10 calls. They began telephone interviews the week of April 23rd, and continued until completed the week of May7-11th, 2012.

Procedures for the telephone interviews are detailed in (Appendix L). Participants were offered the opportunity to participate in a draw for a Chapters' Gift Certificate, as well as an on-line option to respond to the survey if preferred to the telephone interview mode. Dillman et al. (2009) state that the speed of response is enhanced if people are offered a mode of response that they prefer. If the DRC requested to complete the online version instead of the phone call, the research assistant arranged to send the DRC the email invitation (Appendix M) and one reminder invitation (Appendix N). Attempts to contact DRCs and results of telephone calls were tracked by the research assistants using a tracking form with identification codes assigned to respondents. Personally identifying information was removed from the tracking form when data collection was complete.

One research assistant compiled data regarding response rate of the sample of DRCs (Table 3.4), to maintain confidentiality regarding participants. The report detailed number of responses by telephone and those that requested the electronic version of the questionnaire.

Table 3.4

Questionnaire Participant Data

DRC Sample 86 LTC homes	Completed by phone	Requested & sent mail/link	Refused	Not Reached	Incomplete
Hamilton	11	6	4	7	0
Niagara	22	1	1	7	0
Haldimand Norfolk	13	1	1	2	0
Burlington	3	1	2	4	1
Total	49	9 requested 8 responded 6 usable responses	8	20	1

Forty-nine DRCs (or their designates) out of the 86 LTC homes completed the telephone questionnaire. Nine DRCs requested the electronic version of the questionnaire, and eight completed it, with six providing usable data. Two were removed from the database. Out of 86 LTC possible respondents, there were 55 usable responses from this sample, which is a 63.9% response rate.

3.5.4 Point of Care Staff Print Questionnaire

As previously described a LTC home was purposefully selected so that point of care staff who have limited email and internet access could be included in the study. The home's Continuous Quality Improvement/Professional Advisory Committee approved the BP Blogger survey proposal and provided notification to the researcher of the approval on January 9th, 2012 (Appendix E). Procedures for recruiting staff and collecting data were negotiated with the DRC and Assistant DRC (ADRC) of the home. The researcher suggested meeting with staff on each unit of the LTC home on respective

shifts, and requested the opportunity to be allocated time on the agenda of regularly scheduled staff meetings to liaise with staff regarding the research. This would have enabled the researcher to explain the purpose and importance of the research, as well as the opportunity to personally extend the invitation to contribute to the evaluation. The researcher also suggested housing drop boxes on the nursing units for the questionnaire returns which could be picked up at intervals by the researcher. The workload and time constraints of staff in the context of LTC were determining factors in the strategy that was developed. The DRC, ADRC and the researcher discussed a mutually agreed upon set of procedures that would be acceptable, determined to be least disruptive to care procedures, and deemed most likely to be successful in the LTC home. A decision was made to extend an invitation to the entire staff at the LTC home to participate in the survey. The BP Blogger had been distributed in several ways at the LTC home, at times only to nursing staff, and at times to the entire staff depending on the topic. The study provided the opportunity to reach the entire interdisciplinary and auxiliary staff in the LTC home to determine their awareness, and opinion regarding the newsletter. The plan was for the invitations and print questionnaire to be delivered to all staff in the internal mail system. Returns would be placed in the stamped addressed envelope provided by the researcher. One reminder invitation and questionnaire would be issued with a stamped addressed envelope for returns.

As recommended by Dillman et al. (2009) an incentive to enhance participation was offered as a social exchange. Staff had an opportunity to enter a draw for a day off with pay upon completion of the survey, commensurate with the usual practice at this home for quality improvement initiatives.

Once ethics approval was received April 5th, 2012 (File 11-192-McCleary) and forwarded to the DRC of the LTC home, the DRC provided the researcher with a list of the LTC home's entire staff, including management, nursing, allied health, unregulated health care providers, pastoral care, dietary staff, maintenance, housekeeping, recreation and other support staff. The researchers developed a data tracking tool, and assigned each staff an identification code to track returns.

A pre-notice of the study was posted on each unit (Appendix O) as well as sent out in the facility's weekly newsletter in the internal email system (Appendix P). The procedure to recruit staff was to distribute the questionnaires in the internal print mail system of the LTC home. Envelopes were prepared for each staff member on the list provided by the DRC. Each envelope contained the letter of invitation to participate in the study (Appendix Q), the print questionnaire (Appendix C) with an assigned identification number, as well as a stamped return envelope addressed to the researcher at Brock University. The envelopes were addressed to each staff and categorized in boxes by discipline or unit of employment for ease of distribution in the facility. They were delivered to the facility for distribution on April 26th, 2012. There was a lapse of a few weeks between the initial invitation and reminder request to allow time for returns from staff that worked part time, and would not receive the questionnaire immediately. Returns were tracked by the researcher on the data tracking tool.

A second notice regarding the research was sent out in the weekly newsletter, and the staff who had not returned the survey were sent one reminder letter (Appendix R) with a replacement questionnaire and stamped addressed envelope for distribution on May 7th, 2012. The same procedure was followed in categorizing the envelopes by

discipline or unit of employment for ease of distribution in the internal mail system. Returns were once again tracked on the list developed for the staff from the LTC home. Out of a possible 622 staff members who were included in the sample, there were 144 respondents, which is a 23.15% response rate. Of these 622, the direct care staff respondents included HCAs (n = 27, 18.9%), PSWs (n = 34, 23.8%), RPNs (n = 27, 18.9%), and RNs (n = 16, 11.2%) as well as other interdisciplinary staff (Table 4.2).

3.6 Data Analysis

SurveyMonkey "Select" (2011) was used to create and administer the electronic survey. The electronically disseminated questionnaire, web-site pop-up mode, DRC telephone interview, and DRC electronic questionnaire option were assigned unique URL identifiers to allow for analysis of modes separately. The database from SurveyMonkey "Select" was downloaded and converted to an IBM SPSS (2009) data document. The responses from the electronically disseminated questionnaire and web-site pop-up results were imported from SurveyMonkey into the SPSS data base.

The researcher entered the data from the DRC telephone questionnaires and the LTC home staff questionnaires into the electronic database created in IBM SPSS (2009), for each mode of data gathering. Unique identifying (ID) numbers were assigned to paper versions of the questionnaires to enable the researcher to correct data entry errors. The responses from DRCs who responded to the telephone questionnaire were merged with the data from the DRC electronic questionnaire for analysis.

The researcher went through the database, coding for responses in SPSS that were blank, from Survey Monkey. For items on the questionnaires with the option of responding "other", the researcher examined the details and reassigned the information to

existing response categories when possible. New categories were developed for some questions, for example for Q. 25 which requested demographic data regarding professional designation, new categories were created for pastoral care, dietary, housekeeping, and auxiliary staff to enable the researcher to quantify responses. New variables were created to capture if respondents (1) received the BP Blogger from multiple sources (email, meetings, posted); (2) received the BP Blogger in multiple formats; (3) pass on the BP Blogger in multiple ways; (4) share the BPB Blogger with multiple types of people (RN, unregulated, families).

The researcher performed data cleaning, checking for data entry or other errors by reviewing frequencies for implausible values, and doing logic checks, as well as identifying invalid or improbable responses (Tulane University, 2012). Two unusable web-site responses were removed. Two incomplete surveys were removed from the DRC electronic survey, and one incomplete telephone interview was removed. The preliminary data analysis plan as described in Appendix S was followed. Briefly, mainly quantitative and some qualitative analyses were conducted.

3.6.1 Quantitative Analysis

Quantitative analysis was done using descriptive statistical techniques. Frequencies were calculated for each variable. Visual displays (e.g., bar charts / pie charts) were examined. Descriptive statistics of demographic data were used to describe the sample and sub-samples (electronically distributed questionnaire, web-site pop-up, LTC Director of Resident Care (DRC) telephone questionnaire, and LTC home print questionnaire).

Response rates from Mary Lou van der Horst's distribution list were calculated by determining the number of people who indicated that they received the request to participate in the survey from her. Data were collected from the web-site of the RGP central that houses the BP Blogger, for a one month time frame, to determine the dissemination through this format, as well as from the responses to the web-site pop-up survey. Response rates were calculated for the LTC home DRC survey, and the survey of the point of care staff in the LTC home. Once analysis by mode was completed, the researcher conducted an analysis of the complete data set. Cross-tabs were used to examine relationships among some of the variables (e.g., to identify possible relationships between professional designation, work setting, or work role and how participants receive or pass on the BP Blogger). A new variable was created for multiple modes of receiving the BP Blogger. Findings are reported separately for each sample in tables and charts.

Responses to open ended questions, where participants were provided with the opportunity to comment (Questions 3. 12, 14, 20, 23, 24, 32) were entered as text in the electronic database. A decision was made to develop categories in SPSS for responses to Question 3 (How did you first learn of the BP Blogger?) to enable quantification of the responses.

3.6.2 Qualitative Analysis

A site license was obtained to enable the researcher to use NVIVO10 software from QSR International, to perform analysis on the qualitative data. "Content analysis is a research method for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, a representation of facts and a

practical guide to action" (Elo & Kyngas, 2007, p. 108). Qualitative responses for Q. 12, 14, 20, 23, 24, and 32 (Appendix B) were coded into themes according to the preliminary categorization matrix (Appendix T).

The researcher used deductive content analysis. The process of deductive analysis "is based on an earlier theory or model and therefore it moves from the general to the specific" (Elo & Kyngas, 2007, p. 107). In deductive analysis, the researcher develops a categorization matrix, reviews data, and codes it for correspondence with identified categories. "A category is a group of content that shares a commonality" (Graneheim & Lundman, 2004, p. 107) and may include a number of sub categories. Codes are key words, phrases or statements that relate to the same central meaning (Graneheim & Lundman, 2004). Preliminary categories were developed from the tenets of Rogers' Theory of Diffusion of Innovations (2003). They included: (1) path & channels of communication; (2) individual & organizational characteristics; (3) perceived attributes of the innovation; and (4) use of the innovation in practice. See Appendix T for definitions of these categories in the categorization matrix. Sub categories were developed based on theory. These subcategories were used to code the data, and are the closest level to the data. For example, in the category of path, or channels of communication, examples of subcategories were email, print, posting on a bulletin board, interpersonal communication, meetings, workshops, internet, professional groups, and networks.

Data were reviewed for content, coded, and categorized. The process was to review data from each mode separately, and code it for category (1) then review and code data for Category (2) and so forth. Generally there was one response per person coded to

a category. The data was reviewed for uncoded text. An inductive approach was used to create new categories when data did not fit with the preliminary categories: "inductive data moves from the specific to the general" (Elo & Kryngas, 2007, p. 109). An example of coding that was developed to capture an emerging theme was the creation of sub codes under (1) Path, Channels of Communication. Many responses to Q. 32, "What is your most frequent source of information about best practices for the elderly?" included professional organizations such as the RNAO, Best Practice Guidelines, and RNAO web-site, in their response. The researchers thought that this information needed to be coded in sub categories. The data from this survey regarding the use of the RNAO Best Practice Guidelines for evidence based practice, demonstrates that this is one of the most frequent sources of information used by nurses, supporting the need for continued development, updating, dissemination, implementation and funding of the Best Practice Guidelines project.

In discussion with the supervisor, consistency of application of codes was reviewed and codes were added to capture the themes in the data. Data was then organized to try to make sense of it. Notes were kept in a journal regarding the processes used. The journal was also used to track ideas that came up, while referring back to the research questions to maintain the focus on the research questions.

Regular meetings were held with the thesis advisor to enhance investigator triangulation to "reduce the possibility of a biased interpretation of the data" (Polit & Beck, 2004, p. 431). Data was coded for characteristics of the respondents, for example professional designation, and place of work, for potential differences/similarities in responses. Data was coded for direct care staff in LTC to enable the researcher to

determine point of care staffs' perceptions of the BP Blogger, as well as use in practice. Citations of qualitative data were chosen to illustrate original data that was coded for content analysis. Links between Rogers' Theory of Diffusion of Innovations (2003), the descriptive and qualitative data enhance reliability.

3.7 Feedback

The Pre-notice email (Appendix F) as well as letters of invitation (Appendix G, H, Q, and R) contained contact information for the researchers to enable participants to request feedback regarding the results of the study. A summary of the results as well as notification of publication in scientific journals will be sent to the LTC home that participated in the research study.

3.8 Summary

This chapter has described the research methods for the thesis research. Subsequent chapters in the thesis will report on and discuss the findings.

Chapter 4

Findings

This chapter presents findings, including description of the sample and results of analyses answering the research questions. The reader will note that some totals in tables summarizing frequency of responses to demographic data, such as designation or training, may be larger than the sample size because of multiple responses. Findings are reported from responses of the email distribution sample; LTC DRC telephone sample; LTC home point of care sample; and combined sample of respondents.

4.1 Sample Description

As shown in Table 4.1, between 28.5% and 85.5% of respondents in each of the samples were aware of the BP Blogger before the survey. Of the 323 survey respondents, 188 had read or browsed the BP Blogger. Thirteen respondents, 9 of whom indicated that they had read the BP Blogger, did not complete the remaining items on the questionnaire. These respondents were eliminated from most of the further analyses (n = 5 from the email distribution sample; n = 6 from the web-site pop-up sample; and n = 1 from the Long Term Care Home survey). Of the 188 respondents who were eligible to complete items about the BP Blogger, 179 completed the remaining items on the questionnaire: 91 from the email distribution sample; 3 from the web-site pop-up sample: 45 from the DRC sample; and 40 from the Long Term Care Home survey. See Table 4.1 for details. Tables 4.2 - 4.5 show demographic information about the sample of everyone who responded to the survey and the subsample of respondents who had read the BP Blogger and completed the rest of the survey (professional designation, work setting, and work role).

Table 4.1

Participants Providing Responses About BP Blogger

Variable	Combined Sample n = 323 n (% of sample)	Email Distribution n = 114 n (% of sample)	Web-site Pop-up n = 10 n (% of sample)	DRC LTC Home n = 55 n (% of sample)	Long Term Care Home n =144 n (% of sample)
Awareness of BP Blogger before the survey? Yes	189 (58.5)	95 (83.3)	6 (60)	47 (85.5)	41 (28.5)
Read or browsed the BP Blogger	188 (58.2)	96 (84.2)	7 (70)	45 (81.8)	40 (27.7)
Read the BP Blogger & Filled out the rest of the Questionnaire	179 (55.4)	91 (79.8)	3 (30)	45 (81.8)	40 (27.7)

Table 4.2

Sample Description: Professional Designation of All Respondents

What is your professional designation/training?	Sample				
	Combined n = 310 n (%)	Email Distribution n =108 n (%)	Web-site n = 4 n (%)	LTC DRC Survey n = 55 n (%)	LTC Home Staff Survey n = 143 n (%)
HCA	27 (8.7)	0	0	0	27 (18.9)
PSW	35 (11.3)	1 (1.9)	0	0	34 (23.8)
RPN	41 (13.2)	12 (11.1)	0	2 (3.6)	27 (18.9)
Registered Nurse	129 (41.6)	62 (57.4)	2 (50.0)	49 (89.1)	16 (11.2)
NP	1 (0.3)	0	1 (25.0)	0	0
CNS	1 (0.3)	1 (.9)	0	0	0
Social Worker	6 (1.9)	4 (3.7)	0	0	2 (1.4)
OT	6 (1.9)	6 (5.6)	0	0	0
Dietary	9 (2.9)	0	0	0	9 (6.3)
Administration	66 (21.3)	35 (32.4)	0	13 (23.6)	18 (12.6)
Educator	22 (7.1)	17 (15.7)	1 (25.0)	3 (5.5)	1 (0.7)
Student	2 (0.6)	0	0	0	2 (1.4)
Volunteer	2 (0.6)	0	0	0	2 (1.4)
Admin. support	1 (0.3)	0	0	0	1 (0.7)
Dental	1 (0.3)	1 (0.9)	0	0	0
Housekeeping	3 (1.0)	0	0	0	3 (2.1)
Lab Tech	2 (0.6)	1 (.9)	0	0	1 (0.7)
Librarian	2 (0.6)	2 (1.9)	0	0	0
Maintenance	1 (0.3)	0	0	0	1 (0.7)
Other	1 (0.3)	0	0	0	1 (0.7)
Pastoral Care/Chaplin	1 (0.3)	0	0	0	1 (0.7)
Restorative Care	4 (1.3)	0	0	0	4 (2.8)
Therapeutic Rec.	9 (2.9)	1 (0.9)	0	0	8 (5.6)
Missing	5 (1.6)	3 (2.8)	1 (25)	0	1 (0.7)

Note: Some of the columns totals are greater than the total because some respondents indicated more than one designation.

Table 4.3

Sample Description: Professional Designation Participants Who Provided Data About BP Blogger Dissemination

What is your professional designation?	Sample (n=179) n (%)
HCA or PSW	16 (8.9)
Registered Practical Nurse	22 (12.3)
Registered Nurse	105 (58.7)
Nurse Practitioner	1 (.6)
Clinical Nurse Specialist	1 (.6)
Social Worker	4 (2.2)
OT	5 (2.8)
Administration	44 (24.6)
Educator	21 (11.7)
Student	1 (0.6)
Dental	1 (0.6)
Lab Tech	1 (0.6)
Librarian	20(1.1)
Maintenance	1 (0.6)
Pastoral Care	1(.6)
Therapeutic Rec.	1 (0.6)
Missing	1 (0.6)

Table 4.4

Sample Description: Current Work Setting

What is your Work Setting?	Sample					
	Combined n = 310 n (%)	Read & completed questionnaire n=179 n (%)	Email Distribution n = 108 n (%)	Web-site n = 4 n (%)	LTC DRC n = 55 n (%)	LTC Home n = 143 n (%)
LTC Home	274 (88.4)	157 (87.7)	80 (74.1)	2 (50.0)	55 (100)	137 (95.8)
Acute Care	12 (3.9)	3 (1.7)	6 (5.6)	1 (25.0)	0	5 (3.5)
Community	23 (7.4)	16 (8.9)	16 (14.8)	0	1 (1.8)	6 (4.2)
Complex Care	7 (2.3)	6 (3.4)	5 (4.6)	0	0	2 (1.4)
Rehabilitation	14 (4.5)	2 (1.1)	2 (1.9)	0	0	12 (8.4)
University	9 (2.9)	6 (3.4)	6 (5.6)	0	0	3 (2.1)
Community College	4 (1.3)	1 (0.6)	3 (2.8)	0	0	1 (0.7)
Not Applicable	3 (1.0)	2 (1.1)	2 (1.9)	0	0	1 (0.7)
Other	7 (2.3)	3 (1.7)	2 (1.9)	0	1 (1.8)	4 (2.8)
Missing	6 (1.9)	5 (2.8)	4 (3.7)	1 (25.0)	0	1 (0.7)

Note: Totals sum to more than the sample size in some columns due to multiple responses by some respondents.

Table 4.5

Sample Description: Current Role

What is your current role?	Sample					
	Combined n = 310 n (%)	Read & completed questionnaire n= 179 n (%)	Email n =108 n (%)	Web-site n =4 n (%)	LTC DRC n = 55 n (%)	LTC Home Staff n = 143 n (%)
Direct care	126 (40.6)	47 (26.3)	25 (23.1)	1 (25)	6 (10.9)	94 (65.7)
Management	119 (38.4)	95 (53.1)	49 (45.4)	0	48 (87.3)	22 (15.4)
Consultation	35 (11.3)	31 (17.3)	22 (20.4)	1 (25)	3 (5.5)	9 (6.3)
Education	41 (13.2)	35 (19.6)	27 (25)	0	11 (20)	3 (2.1)
Student	3 (1.0)	1 (0.6)	0	0	0	3 (2.1)
Volunteer	3 (1.0)	0	0	0	0	3 (2.1)
Other	0	5 (2.8)	0	0	0	0
Missing	6 (1.9)	0	3 (2.8)	1 (25)	0	2 (1.4)

As shown in Table 4.3, of the 179 respondents who were aware of the BP Blogger, had read a BP Blogger, and were eligible to complete the survey questions, the highest proportion indicated professional designation of RN (58.7%), Administration (24.6%), or Registered Practical Nurse (12.3%). Table 4.4 shows the workplace of respondents. Of the 179 respondents who completed items about BP Blogger dissemination, the largest proportion worked in LTC (87.7%), followed by community (8.9%), complex continuing care (3.4%), and educational institution (3.4%). Frequencies for responses regarding the role of respondents are detailed in Table 4.5. Of the respondents who completed items about BP Blogger dissemination, 53.1% were managers, 26.3% provided direct care, and 19.6% were educators. The category for direct care includes some managers; seven respondents who reported that they provided direct care also said they were managers.

Among the 179 respondents who completed items about BP Blogger dissemination, 164 responded to the question about age. The mean age was 49.0 years (SD = 9.3).

4.2 Research Question 1. What is the Dissemination Pathway?

To determine the answer to the first research question "What is the dissemination pathway of the BP Blogger?" frequencies of responses to relevant survey questions and qualitative data coded to the categories *Path, Channel of Communication* and *Individual and Organizational Characteristics* were examined.

4.2.1 Source of request to participate in the study

This item provides information about who participants receive the BP Blogger from, either from the author who distributed requests to participate in the study along with a BP Blogger, or somewhere later in the dissemination pathway. Of the 114

respondents in the email distribution sample, 106 indicated whether they received the invitation to participate from Ms. van der Horst and 56 (52.3%) received it from someone else. Of these 56 respondents, 9 indicated that they had received a copy of the BP Blogger from Ms. van der Horst sometime in the past.

4.2.2 Source of first learning about the BP Blogger

Responses to the open ended question "How did you first learn of the BP Blogger" were categorized and analyzed in SPSS. Responses are shown in Table 4.6. In the email distribution sample, the most common responses were interpersonal communication (27.5%), email (24.2%), and through a professional group (14.3%). Directors of Care also frequently reported first learning about the BP Blogger through interpersonal communication (33.3%), followed by email (26.7%), and through the workplace (8.9%). This differs somewhat from the results from LTC home sample, as they most frequently reported first learning of the BP Blogger in the workplace (40.0%), followed by interpersonal communication (22.5%), and workshops/in-services (15%).

Table 4.6

Source of First Learning of the BP Blogger

How did you first learn of the BP Blogger?	Sample			
	Email Distribution n = 91 n (%)	Web-site Pop up n = 3 n (%)	LTC DRC n = 45 n (%)	LTC Home n = 40 n (%)
Interpersonal communication	25 (27.5)	1 (33.3)	15 (33.3)	9 (22.5)
Workshops/in-service	1 (1.1)	0	0	6 (15)
Network	6 (6.6)	0	3 (6.7)	0
Professional Group	13 (14.3)	1 (33.3)	3 (6.7)	0
Internet	2 (2.2)	0	2 (4.4)	1 (2.5)
Workplace	10 (11.0)	1 (33.3)	4 (8.9)	16 (40.0)
Posted	1 (1.1)	0	2 (4.4)	1 (2.5)
Email	22 (24.2)	0	12(26.7)	0
Mail	0	0	1 (2.2)	2 (5.0)
Staff newsletter	0	0	0	5 (12.5)
Can’t remember	4 (4.4)	0	3 (6.7)	0
Missing	7 (7.7)	0	0	0

4.2.3 Sources from which BP Blogger received

Table 4.7 details the frequencies of responses as to whether respondents had ever received the BP Blogger from specific sources. The respondents from the email distribution sample most often received the BP Blogger from network distribution lists (36.3%), Ms. van der Horst (34.1%), or colleagues (30.8%). The most frequently endorsed source among the DRC sample was Ms. van der Horst (57.8%), followed by network distribution lists (57.8%), colleagues (24.4%), professional meetings (20.0%), and workshops (20.0%). The most frequent source among Long Term Care home respondents was newsletters (35%), followed by workshops (22.5), and the workplace (20.0%).

Table 4.7

Sources Ever Received BP Blogger From

Have you ever received BP Blogger from any of these sources?	Sample					
	Com-bined Sample n = 179 n (%)	Email Distribu-tion n = 91 n (%)	Email not ML n = 5 n (%)	Web-site Pop up n =3 n (%)	LTC DRC n = 45 n (%)	LTC Home n = 40 n (%)
Mary Lou van der Horst	62 (34.6)	31 (34.1)	9 (18.8)	1 (33.3)	26 (57.8)	4 (10)
Professional meeting	29 (16.2)	15 (16.5)	6 (12.5)	1 (33.3)	9 (20.0)	4 (10.0)
Workshop	33 (18.4)	14 (15.4)	7 (14.6)	1 (33.3)	9 (20.0)	9 (22.5)
Course	10 (5.6)	4 (4.4)	2 (4.2)	1 (10.0)	4 (8.9)	2 (5.0)
Newsletter	8 (21.2)	16 (17.6)	4 (8.3)	1 (33.3)	7 (15.6)	14 (35.0)
Network Distribution list	63 (35.2)	33 (36.3)	19 (39.6)	1 (33.3)	26 (57.8)	3 (7.5)
Manager/ Administrator	28 (15.6)	11 (12.1)	9 (18.8)	1 (33.3)	10 (22.2)	6(15.0)
Educator	27 (15.1)	15 (16.5)	6 (12.5)	2 (66.7)	8 (17.8)	2 (5.0)
Colleague	45 (25.1)	28 (30.8)	18 (37.5)	1 (33.3)	11 (24.4)	5 (12.5)
Other (Workplace)	8 (4.5)	0	0	0	0	8 (20.0)
Other (Web-site)	5 (2.8)	1 (1.1)	1 (2.1)	0	4 (8.9)	0
Missing	7 (3.9)	2 (2.2)	0	0	1 (2.2)	4 (10)

Note: Totals sum to more than the sample size in some columns due to multiple responses by some respondents.

A new variable was created to determine the number of sources from which respondents received the BP Blogger. Most of the 165 participants who answered this question received it from one (n = 72, 43.6%) or two sources (n= 45, 27.3%). Twenty-two (13.3%) received it from 4 or more sources. The maximum number of sources was eight. The median number of sources was 2 in all sub-samples except the LTC home sample, where the median was 1.

4.2.4 Format for Receiving the BP Blogger

Many of the respondents had received the BP Blogger in electronic format at some time: email distribution sample (n = 83, 91.2%); web-site pop up sample (n = 3, 100%); LTC DRC sample (n = 43, 95.6%); LTC home sample (n = 40, 30%). It is assumed that some participants in the email distribution sample interpreted this question as pertaining to receiving the BP Blogger before the survey; some participants indicated that the first time they received the BP Blogger was when then received the request to participate in the study. Fewer respondents had received a paper copy of the BP Blogger, except in the LTC home sample, where 35 (87.5%) had received a paper copy. Paper copies had been received by 26 (28.6%) of the email distribution sample; 1 (33.3%) of the web-site pop up sample, and 17 (37.8%) of the LTC DRC sample. In the combined sample, 43 (24%) indicated having received the BP Blogger in both formats. This was more likely for managers (30.5%) than direct care staff (12.8%).

4.2.5 Number of People the BP Blogger is Shared With

Frequencies were determined for categories of number of people the BP Blogger was shared with (Table 4.8). Most often respondents reported sharing with one to ten people. From the email distribution sample, most often respondents stated that they

shared with one to ten people (26.4%), 31-100 people (23.1%), or 21-30 people (16.5%). In the DRC sample, respondents most often shared with one to ten people (26.7%), greater than 100 people (24.4%), or 31-100 people (22.2%). In the LTC home sample, the respondents were more likely to share with one to ten people (50.0%), nobody (32.5%), or 11-20 people (10.0%).

Table 4.8

Number of People BP Blogger typically shared with

With how many people do you typically share the BP Blogger?	Sample				
	Combined Sample n = 179 n (%)	Email Distribution n = 91 n (%)	Web-site Pop up n =3 n (%)	LTC DRC n = 45 n (%)	LTC Home n = 40 n (%)
None	21(11.7)	8(8.8)	0	0	13(32.5)
1-10	57(31.8)	24(26.4)	1(33.3)	12(26.7)	20(50)
11-20	22(12.3)	11(12.1)	0	7(15.6)	4(10.0)
21-30	22(12.3)	15(16.5)	2(66.7)	5(11.1)	1(2.5)
31-100	32(17.9)	21(23.1)	0	10(22.2)	2(5.0)
>100	25(14.0)	12(13.2)	0	11(24.4)	2(5.0)

4.2.6 Who has the BP Blogger typically been shared with

Frequencies of responses to the question regarding who people shared the BP Blogger with are shown in Table 4.9. In the combined sample, respondents most often disseminated to unregulated providers (88%), registered nursing staff (75.4%), and management staff (41.9%). Besides filling out the categories in response to this question, under the option to put in a comment, an electronic survey respondent reported sharing with "my colleagues at meetings....inspectors", another shared with "Health Department staff", while another respondent reported sharing with "chaplaincy, church mates, service providers such as physiotherapists, music therapists, etc.". A DRC respondent stated that "depending on the Blogger (they) share with different staff". Another DRC reported sharing with the family council. A respondent to the LTC home staff survey reported sharing the BP Blogger with "friends and neighbours".

Table 4.9

Who BP Blogger has typically been shared with

Who have you typically shared the BP Blogger with?	Sample				
	Combined Sample n = 179 n (%)	Email Distribution n = 91 n (%)	Web-site Pop up n = 3 n (%)	LTC DRC n = 45 n (%)	LTC Home n = 40 n (%)
Nobody	19 (10.6)	8 (8.8)	0	0	11 (27.5)
Unregulated care providers	105 (88.8)	52 (57.1)	2 (66.7)	30 (66.7)	21 (52.5)
RN/RPN	135 (75.4)	68 (74.7)	3 (100)	45 (100)	19 (47.5)
Management Staff	75 (41.9)	43 (47.3)	1 (33.3)	26 (57.8)	5 (12.5)
Educators	48 (26.8)	33 (36.3)	1 (33.3)	13 (28.9)	1 (2.5)
Students	45 (25.1)	25 (27.5)	0	13 (28.9)	7 (17.5)
Residents or patients	15 (8.4)	8 (8.8)	1 (33.3)	5 (11.1)	1 (2.5)
Families	28 (15.6)	13 (14.3)	1 (33.3)	8 (17.8)	6 (15.0)
Volunteers	18 (10.1)	8 (8.8)	0	9 (20.0)	1 (2.5)
Networks/Professional organizations	18 (10.1)	14 (15.4)	0	4 (8.9)	0
Other	3 (1.7)	1 (1.1)	0	0	2 (5.0)
Missing	1	0	0	0	1 (2.5)

Note: Columns sum to more than the sample size due to responses to multiple categories.

A new variable was created to determine the number of categories of people the respondents passed the BP Blogger on to. Frequencies are reported for the combined sample and for subsamples based on role (direct care and managers). As shown in Table 4.10, most respondents in the combined sample passed it on to one or two categories of recipients (n = 45, 25.7% and n = 42, 24%, respectively). Twenty-nine (16.4%) reported passing it on to 5 or more categories of people.

Table 4.10

Number of categories of people BP Blogger passed on to

Number of categories of people BP Blogger passed on to	Sample		
	Combined Sample n = 175 n (%)	Direct Care n = 47 n (%)	Managers n = 95 n (%)
0	4 (2.3)	29 (4.3)	1 (1.1)
1	45 (25.7)	17 (36.2)	21 (22.1)
2	42 (24.0)	11 (23.4)	25 (26.3)
3	38 (21.7)	10 (21.3)	21 (22.1)
4	17 (9.7)	3 (6.4)	10 (10.5)
5	10 (5.7)	1 (2.1)	8 (8.4)
6	6 (3.4)	1 (2.1)	4 (4.2)
7	6 (3.4)	0	2 (2.1)
8	6 (3.4)	2 (4.3)	2 (2.1)
9	0	0	0
10	1 (0.6)	0	1 (1.1)

4.2.7 How the BP Blogger is Disseminated

Table 4.11 details how respondents disseminate the BP Blogger. In the combined sample, the most frequent methods of passing on the BP Blogger are by paper (60.1%), by email (48.3%), and by posting at the workplace (37.9%). These results varied by sample, with the email distribution sample respondents most frequently passing on by email (66.2%) and the LTC DRC and LTC home sample respondents most frequently passing on as a paper copy (72.7% and 69.2%, respectively). A new variable was created to capture if respondents passed on the BP Blogger in multiple ways. Table 4.12 summarizes the number of ways respondents disseminate the BP Blogger, for the combined sample and for subsamples defined by role (direct care and management). There was an option to make a comment under "other" for how people passed on the BP Blogger. For the analyses, these responses were allocated to a corresponding established category.

Table 4.11

How the BP Blogger Has Been Disseminated

How have you passed on the BP Blogger to others?	Sample				
	Combined Sample n = 153 n (%)	Email Distribution n = 80 n (%)	Web-site Pop up n = 3 n (%)	LTC DRC n = 44 n (%)	LTC Home n = 26 n (%)
Email	74 (48.3)	53 (66.2)	2 (66.7)	15 (34.1)	4 (15.4)
Meetings	34 (22.2)	17 (21.2)	1 (33.3)	14 (31.8)	2 (7.7)
Paper	92 (60.1)	39 (48.7)	3 (100)	32 (72.7)	18 (69.2)
Post at Workplace	58 (37.9)	26 (32.5)	2 (66.7)	22 (50)	8 (30.7)
Link to web-site	16 (10.4)	11 (13.7)	0	4 (9.0)	1 (3.8)
Newsletter	14 (9.1)	8 (10)	0	3 (6.8)	3 (11.5)
Network distribution	8 (5.2)	6 (7.5)	0	2 (4.54)	0
Missing	1 (0.7)	0	0	0	1 (3.8)

Note: Sample size is those who indicate at least one method of passing on the BP Blogger

Table 4.12

Number of Ways Respondents Disseminate the BP Blogger

Number of ways respondents pass on the BP Blogger	Sample		
	Combined Sample n = 179 n (%)	Direct Care n = 47 n (%)	Management 95 n =n (%)
Number of ways passed on			
1	93(53.1)	29(61.7)	47(49.5)
2	45(25.7)	11(23.4)	26(27.4)
3	25(14.3)	5(10.6)	16(16.8)
4	4(2.3)	0	3(3.2)
5	4(2.3)	1	1(1.1)
6	1(.6)	0	1(1.1)
7	2(1.1)	0	1(1.1)
Missing	4(2.2)		

Three hundred and forty six comments in the qualitative responses were coded to the category *Path, Channel of Communication.* This category describes the dissemination pathway of the BP Blogger. The subcategories to which text was coded were: (1) *Distribution;* (2) *Print;* (3) *Interpersonal and interactive*; (4) *Consistency, frequency, not receiving*; (5) *Mass media, web-sites*; (6) *Posting*; (7) *Managers;* (8) *Professional organizations*; (9) *Accessibility.* The subcategories contain respondents' descriptions of how they disseminate the BP Blogger, as well as recommendations for future dissemination.

There were 71 comments coded under the subcategory *Distribution,* 23 of which were from direct care staff. This category includes comments about distribution through email, distribution lists, fax, newsletters, and networks. Most of the comments indicated that people find "circulation through email is very effective". There were comments about potential improvement, for example by distributing to all managers in long term care, having the option of subscribing, making it easier to forward. Some respondents recommended distributing to families and patients/residents.

There were 71 comments coded in the subcategory *Print*, 19 of which were from Direct Care. Respondents reported using print dissemination to reach those not on email, particularly health care aides. They also reported using it for handouts to students and during staff education sessions, posting, sharing with families, and compiling binders of the BP Blogger as a resource for staff. Respondents suggested that print copies could be read by staff during breaks or spare time.

Seventy comments were coded to the subcategory *Interpersonal and Interactive.* Of these, 16 were from direct care staff. This category includes comments about

distributing the BP Blogger in interpersonal and interactive educational sessions, and recommendations for increasing the dissemination via workshops, orientation, in-services, newsletters, and discussion.

There were 38 comments coded to *Consistency, frequency, not receiving*, 17 of which were from direct care staff. This category captured responses that commented on the fact that respondents were not receiving the BP Blogger as consistently in the past. One respondent stated: "Lately I have not been receiving it and would like to" (Management Staff). Others made recommendations to increase distribution, to disseminate more regularly, as well as more frequently,

There were 23 comments coded to the subcategory *Social Media and Web-sites*, 14 of which were direct care staff. These responses indicated that some respondents are accessing the BP Blogger through web-sites, but they find it difficult to do so. Recommendations were made to improve access, for example, making it "easier to find on Google" (Direct Care), or on the RGP web-site. This category also includes recommendations for dissemination including hosting the BP Blogger link on more professional web-sites, promotion of the online presence, and using other social networking tools (e.g., Facebook, Twitter, Youtube).

There were 23 comments coded to in the subcategory *Posting*, five of which were responses from Direct Care Staff. Responses included reports of currently posting on bulletin boards, and in lunchrooms. As well, there were recommendations to post the BP Blogger on education boards, nursing stations, staff rooms, and staff washrooms for those who do not have access to email.

There were 20 comments coded to the subcategory *Managers*, seven of which were from direct care staff. This category was used to capture responses reflecting recommendations to ensure that managers are aware of the newsletter, and on an email distribution list to receive the BP Blogger, so that they could forward to others.

There were 16 comments coded to the subcategory *Professional organizations*, with seven responses from Direct Care. Respondents reported accessing the BP Blogger on the Regional Geriatric Program central web-site. Respondents' recommendations to disseminate the BP Blogger on web-sites and via email through professional contacts and professional organizations (e.g., RNAO, professional Gerontological Nursing Association, and College of Nurses of Ontario), the Ministry of Health and Long Term Care, or other professional email distribution lists, were captured in this category. There was some overlap with the previous category of *Social Media and Web-sites* in the recommendations to make the BP Blogger easier to access. One respondent recommended, "when you Google RNAO best practice guidelines-it should immediately come up on screen, no clicking through anything further to find the web-site re: time constraints of nurses" (Direct care).

There were 13 responses coded in the subcategory *Accessibility*, nine of which were from direct care staff. There were general suggestions to increase access, make it easier to find, and people commented that they wished to receive the BP Blogger themselves.

Text coded to the category of *Individual and Organizational Characteristics*, provide some insight into some of the facilitators and barriers to dissemination of the BP Blogger in LTC. There were 370 comments coded to the category of *Individual and*

Organizational Characteristics, with seven subcategories. The seven subcategories are: (1) Champions; (2) Colour Printer; (3) Communication Networks; (4) Lack of Access to Computer and Email; (5) Positive Attitude, Value for Quality Care; (6) Structure, Manager; (7) Time.

There were seven comments coded to the subcategory *Champions* that provided recommendations for enhancing dissemination. All comments in this category were from respondents who were not in a direct care role (e.g., managers, educators, consultants). This subcategory refers to recommendations to use key contacts or champions to facilitate dissemination of the BP Blogger. This would be someone responsible for receiving and disseminating it within a facility.

4.2.8 Barriers to dissemination

Frequencies of responses to the survey that pertained to barriers, as well as qualitative responses coded to the category of *Individual and Organizational Characteristics* were examined to understand the barriers to dissemination of the BP Blogger. Frequencies of responses regarding barriers to dissemination are shown in Table 4.13. In the combined sample, most respondents indicated that nothing stopped them from disseminating the BP Blogger (54.7%). The most commonly cited barriers were time (19.6%), the fact that staff do not have email (15.1%), and lack of access to a colour printer (6.7%). Some reported the barrier of receiving it irregularly or not at all (3.4%). Under the category of "other" in response to Q. 10 *Is there anything that stops you from passing on the BP Blogger?* there were five responses relating to the fact that people do not wish to duplicate dissemination.

Table 4.13

Barriers to Dissemination

Is there anything that stops you from passing on the BP Blogger?	Sample					
	Combined Sample n = 179 n (%)	Email Distribution n = 91 n (%)	Web-site Pop up n = 3 n (%)	Work in LTC n = 157 n (%)	LTC DRC n = 45 n (%)	LTC Home n = 40 n (%)
Nothing stops me	98 (54.7)	60 (65.9)	1 (33.3)	85 (54.1)	20 (44.4)	17 (42.5)
Time	35 (19.6)	10 (11.0)	1 (33.3)	32 (20.4)	13 (28.9)	11 (27.5)
Staff do not have email	27 (15.1)	10 (11.0)	2 (66.7)	25 (15.9)	11 (24.4)	4 (10.0)
Format not compatible with computer system	3 (1.7)	0	0	3 (1.9)	1 (2.2)	2 (5.0)
No access to colour printer	12 (6.7)	1 (1.1)	1 (33.3)	12 (7.6)	4 (8.9)	6 (15.0)
N/A to clinical priorities	3 (1.7)	0	0	3 (1.9)	2 (4.4)	1 (2.5)
Unable to find on the internet	4 (2.2)	0	0	4 (2.5)	0	4 (10.0)
Inadequate system for passing on information	4 (2.2)	0	0	4 (2.5)	2 (4.4)	2 (5.0)
Irregularly, or not receiving	6 (3.4)	3 (3.3)	0	6 (3.8)	3 (6.7)	0
Other	8 (4.5)	3 (3.3)	0	7 (4.5)	3 (6.7)	2 (5.0)
Missing	17 (9.5)	10 (11.0)	0	14 (8.9)	2 (4.4)	5 (12.5)

4.2.9 Email and internet access at work

Most participants had access at work to email (n = 161, 89.9%) and internet 159 (88.8%). Access to email was more common in the email distribution sample (n = 84, 92.3%) and LTC DRC sample (n = 45, 100%) than in the LTC home survey (n = 30, 75%). Among respondents who provided direct care, 36 (76.6 %) had access to email at work. Among the 14 respondents who were PSWs or HCAs and provided direct care, 6 (42.9%) had access to email at work. All respondents in the DRC sample had access to the internet at work, 84 (92.3%) of the email distribution sample had access to internet at work, and 28 (70%) of the LTC home sample had access to internet at work. One direct care respondent in the LTC home sample checked "no" in response to the question regarding email access at work, and added the comment "we are not good enough".

Less than half of the respondents had tried to access the BP Blogger on the internet: 36 (39.6%) in the email distribution sample; 20 (44%) in the LTC DRC sample; and 12 (30%) in the LTC home sample.

4.2.10 Qualitative responses that identify barriers

Qualitative text coded to the category of *Individual and Organizational Characteristics* provides some insight into some of the barriers to dissemination of the BP Blogger in LTC.

There were 18 comments coded to the subcategory *Time,* with seven of these from Direct Care. This subcategory included comments about lack of time as a barrier, with managers and front line staff being too busy to disseminate or read it. There were also comments expressing appreciation for the length of the BP Blogger as a "quick read" (Management Role), which suits the environment where time is a consideration.

There were 18 comments coded to the subcategory L*ack of Access to Computer and Email*, six of which were from Direct Care. There were statements regarding lack of access to email and internet for unregulated staff; recommendations for print dissemination for those not connected to email; and recommendations for increased access for email and computers.

There were nine comments coded to the subcategory *Colour Printers*, three of which were from Direct Care. Respondents identified the advantages of colour to enhance the attractiveness of the tool. However, they pointed out the expense and lack of access to colour printing as barriers in LTC. For example, one respondent explained: "There is so much to read these days electronically and the blogger has such eye attention colours to it that I think a mailed item should still exist. Not everyone can print in colour so it loses something with posting when you don't have the colour" (Management role). Some respondents suggested creating a black and white version. Others commented on the fact that they had only seen in black and white, which may affect the perception of the tool, reported on later in this paper.

There were 71 references coded to *Distribution* under *Path, Channel of Communication* that have been reported on previously. Under this subcategory there were three statements that commented on the numbers of emails that respondents had to contend with in their work. The number of emails people receive may be a barrier to dissemination in terms of taking time to determine relevance, and to whom recipients pass on information.

Responses coded in the category *Path, Channel of Communication* also provided information regarding barriers. As detailed under 4.2.7, thirty eight comments were

coded to, C*onsistency, Frequency, Not Receiving,* seventeen of which were from Direct Care. There were respondents that indicated they used to receive the Blogger but currently are not on the distribution list, while others wished to have personal copies. Responses recommended enhancing awareness and profile of the BP Blogger with promotion, and more frequent and consistent distribution.

4.2.11 Summary

The BP Blogger is sent out in an electronic format. Generally, people who have access to email reported that this is an efficient way to receive and pass on the BP Blogger. Respondents find a way to disseminate in print format to others who are not on email. Web-site monitoring of the Regional Geriatric Program central web-site demonstrates that the BP Blogger is not accessed frequently from the web-site. Feedback from those who had tried to access the BP Blogger on line was that it was difficult to find. Recommendations were made by respondents to increase awareness, access, frequency, and proliferation of the newsletter on professional web-sites.

Similar concerns are reported in the quantitative and qualitative data regarding the barriers of time, computer, and email access for point of care staff. Cost considerations for printing in colour, as well as lack of access to printers, and not receiving the BP Blogger regularly were also barriers to dissemination identified in both quantitative and qualitative data. Attention to maintaining the distribution list, and ensuring key contacts are forwarding the BP Blogger to others through email and print format are recommended to enhance spread. The method of disseminating the BP Blogger in black and white print, may affect the perception and readability of the tool as described later, in the qualitative data coded to the category of *Perceived Attributes* of the newsletter.

4.3 Research Question 2. Does the BP Blogger reach point of care staff?

Frequencies of responses to relevant survey questions describing the sample, as well as qualitative data from *Individual and Organizational Characteristics* were examined to answer the question of whether the BP Blogger reaches point of care staff.

The characteristics of the sample, reported earlier, are illustrative of whether the BP Blogger reaches point of care staff (people who said they provide direct care, including unregulated health care providers, nurses and allied health care providers). Of the combined sample 126 (40.6%) reported providing direct care, including 23.1% of the email distribution sample, 10.9% of the LTC DRC sample, and 65.7% of the LTC home staff sample (See Table 4.5). As seen in Table 4.9 most of the respondents reported sharing the BP Blogger with unregulated health care providers (88.8%) or RN/RPNs (75.4%).

As shown in Table 4.5, among the 310 people who returned or completed a questionnaire, a smaller proportion of direct care staff than managers were aware of the BP Blogger and could complete items about BP Blogger dissemination (n=47, 26.3% and n=95, 53.1%, respectively). Among the 47 respondents who completed items about BP Blogger dissemination and were in the direct care role, 44 (93.6%) were aware of the BP Blogger prior to the study.

Text coded to the category of *Individual and Organizational Characteristics* assists in providing the answer to how the BP Blogger reaches point of care staff. Out of 370 comments coded to *Individual and Organizational Characteristics,* there were 184 coded to the subcategory *Structure, Manager,* with 69 from Direct Care. This subcategory was used to capture comments regarding the structure that facilitates

dissemination, and descriptions of how managers disseminate the BP Blogger to staff, reflecting the hierarchical structure and flow of communication in LTC. A typical response in this category was, "I sent it out regularly to staff. I save past copies and also use them for education as needed" (Management role). This subcategory included comments about how important it is to ensure managers receive the BP Blogger, so that they can pass it on. There were recommendations to improve information flow through managers, improve distribution lists, as well as enhance systems for dissemination to unregulated staff, for instance including a link to the BP Blogger on the computerized communication system "one click care". There was overlap between text coded to the subcategory *Structure, Manager,* and the subcategory *Managers,* from the category *Path, Channel of Communication*. Both of these subcategories demonstrate the key role that managers play in the dissemination of information to direct care staff in LTC.

There were 111 comments coded to the subcategory *Communication Networks,* 38 of which were from direct care staff. Each organization may have different systems and networks for communication depending on their size, whether they are a chain, funded by the municipality or a private home. Some organizations may have internal email systems, and may be linked to professional networks, or educational institutions. The subcategory of *Communication Networks* included comments regarding internal and external email, posting, networks, professional organizations, and the use of web-sites for distribution of the BP Blogger. Recommendations for future distribution were also captured in this category. There was some overlap in this subcategory, with the subcategory of *Professional Organizations* (*Path, Channel of Communication),* as well as Lack *of Access to Computer and Email (Individual and Organizational Characteristics).*

Respondents identified using email, print and posting for dissemination. For example, a respondent stated, "we email to all staff, print 4 hard copies, put on bulletin board for staff and in the hall for families" (Management Role). This reflects the strategy for communication in the LTC environment, where not all staff have email access, and print copies as well as posting in the work environment is a method to reach staff who do not have email access.

Respondents recommended increased distribution of paper copies and posting to reach staff with no email or computer access in LTC. They also recommended the dissemination of the BP Blogger through professional networks such as the Seniors Health Research Transfer Network (SHRTN), DRC email distribution lists, College of Nurses of Ontario, web-sites such as the Gerontological Nurses Association, and social networking sites such as Facebook, and Twitter.

It appears that the BP Blogger does reach some point of care staff. The flow of information to point of care staff is through managers. Some direct care staff do not have email or computer access, and access varies in each organization. Managers use a variety of methods to disseminate the BP Blogger to reach point of care staff. There are some structures that facilitate the dissemination of information such as orientation, staff meetings, in-services, networks, professional organizations, internal and external email, internet access, and the use of web-sites. Recommendations from managers, direct care staff, and those not working in direct care, that were examined in the qualitative analysis include augmentation of distribution lists, enhancing email, and computer access for staff, dissemination through professional organizations, networks, hosting links to the BP

Blogger on professional web-sites, using social media, and increasing print dissemination to those who do not have access to email.

4.4 Research Question 3. How is the BP Blogger perceived by the people who receive it?

Frequencies are reported for ratings of items related to perception of content, credibility, and presentation of the BP Blogger. Qualitative analysis of responses to open ended questions regarding the format of the BP Blogger and other text pertaining to the attributes of the newsletter coded to the category of *Perceived Attributes* are described. Subcategories under *Perceived Attributes* were established to capture both positive and negative comments, as well as recommendations for the format of the BP Blogger. Responses were captured regarding access, colour, density, electronic, print, readability, relevance, and others, to answer the research question "How is the BP Blogger perceived by the people who receive it?" Qualitative analysis of text coded to the subcategory of *Positive attitude for quality care,* from the category of *Individual and Organizational Characteristics,* as well as the content analysis of text coded to the category of *Most frequent source of best practice information* are reported to answer the research question regarding perceptions of the BP Blogger.

4.4.1 What factors affect whether you read the BP Blogger?

Responses to the question "What factors affect whether you read the BP Blogger?" are reported in Table 4.14. In the combined sample, the most frequently endorsed factors were the topic (n=115, 64.2%), the fact that it was a source of best practice information (n=108, 60.3%), and that it came from a respected source (n=103, 57.5%). The LTC DRCs endorsed source of best practice information, topic, and time

with the same frequency (n=32, 71.1% each), followed by respected source (n=28, 62.2%), and helps me provide better care (n=27, 60.0%). In the LTC home staff sample, the most frequently endorsed factors were: helps me provide better care (n=22, 55.0%), time (n=21, 52.2%), and topic (n=20, 50.0%).

Table 4.14

Factors Affecting Whether the BP Blogger is Read

What factors effect whether you read the BP Blogger?	Combined Sample n= 179	Email Distribution n = 91 n (%)	Web-site n = 3 n (%)	LTC DRC n = 45 n (%)	LTC Home n = 40 n (%)
Respected source	103 (57.5)	58 (65.2)	2 (66.7)	28 (62.2)	15 (37.5)
Know Mary Lou van der Horst	26 (14.5)	19 (21.3)	1 (33.3)	6 (13.3)	0
Source of best practice information	108 (60.3)	56 (62.9)	2 (66.7)	32 (71.1)	18 (45.0)
Helps me provide better care for my residents	96 (53.6)	46 (51.7)	1 (33.3)	27 (60.0)	22 (55.0)
Topic	115 (64.2)	61 (68.5)	2 (66.7)	32 (71.1)	20 (50.0)
Time	86 (48.0)	33 (37.1)	3 (100)	32 (71.1)	21 (52.5)
Computer able to download	23 (12.8)	4 (4.5)	0	11 (24.4)	8 (20.0)
Other	1 (0.6)	1 (1.1)	0	0	0
Conveniently received	5 (2.8)	0	0	2 (4.4)	3 (7.5)
Missing	2 (1.1)	2 (2.2)	0	0	0

Note: Columns sum to more than sample size due to multiple responses.

There were 22 references coded to *Positive attitude, value for quality care*, a subcategory of the *Individual and Organizational Characteristics*, eight of which were from Direct care. These attitudes, and values, are characteristics of individuals that could potentially affect uptake use of the information and dissemination of the newsletter. Respondents reported use of the tool to shift attitudes, for example "when an individual is a skeptic this is a useful tool to provide info" (ID 316, Direct Care). Respondents also referred to using it to deliver "good", "better" or "excellent" care.

4.4.2 Value of content

Responses to the question "Which word is most descriptive of the value you would give to the content of the BP Blogger?" are summarized in Figure 4.1. For subsequent analyses, the category of poor (with one respondent) was collapsed with the category of fair. There was a trend for managers to rate the BP Blogger more highly than direct care staff. More respondents in the manger role, responded excellent 45 (47.4%) compared to 14 (29.8%) of those in the direct care role.

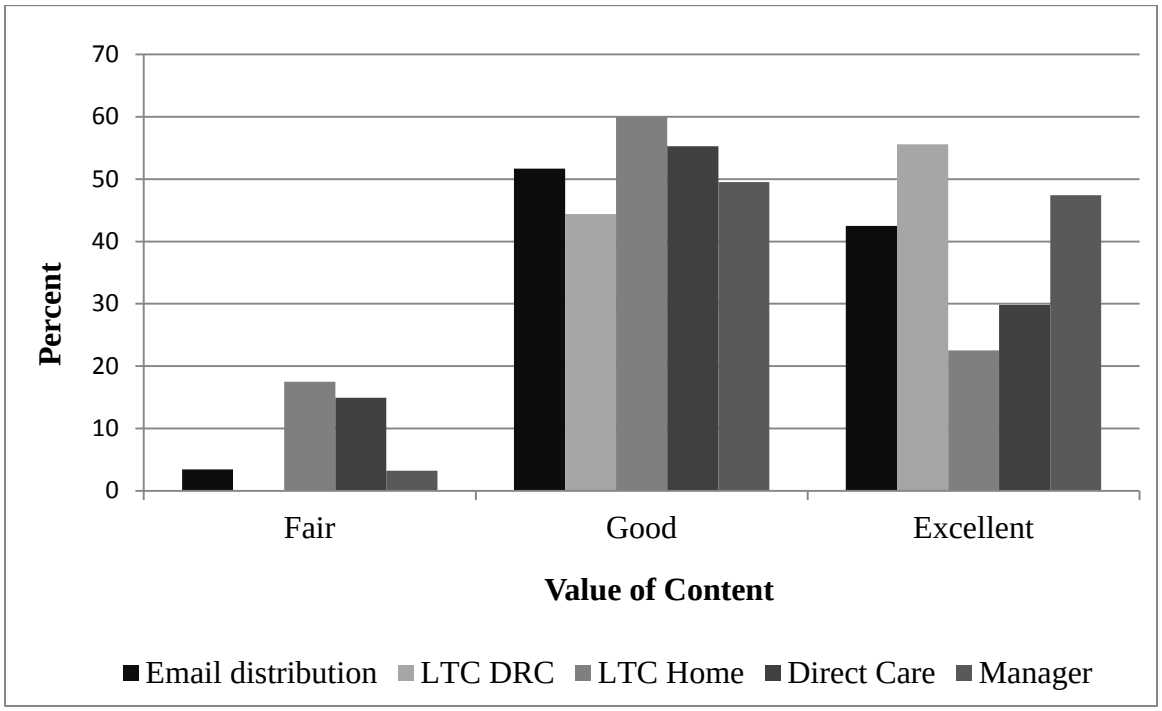

Figure 4.1 Ratings of Value of Content by Sample and Direct Care or Management Role

Note: The poor response option was not selected by any participants and is, thus, not shown. Responses missing from 2 respondents in the Email distribution sample.

There were 206 references coded to the *Relevance* subcategory of *Perceived Attributes*, 16 of which were from Direct Care. Respondents' comments indicated that the main reason that they passed on the BP Blogger, or would pass it on, was if the topic was relevant or pertinent to practice, or if they thought that others would be interested in the topic. Many respondents indicated that the BP Blogger is perceived as relevant, interesting, and informative.

There were 80 comments coded to the *Positive comments* subcategory of *Perceived Attributes,* 25 of which were from direct care providers. According to Rogers' (2003) positive attitudes may lead to increased use of an innovation. There were overall positive comments that were not related to any specific attribute of the BP Blogger, such as "love everything about it" (Direct care) or "like it just the way it is" (Management role). There were also descriptive statements that conveyed a very positive attitude towards the newsletter such as: "Very colourful, attracts attention, key information is highlighted, excellent format, always look forward to new bloggers" (Management).

4.4.2.1 Relationship between Value of Content and Age

The mean age of the 166 respondents who rated the BP Blogger as good or excellent was 49.4 (SD 9.0), and the mean age of the 10 respondents who rated it as poor or fair, was 39.7 (SD 10.0). This difference was statistically significant (t=3. 284, df 161, $p < .01$). However, the sample size in the poor or fair category was small.

4.4.3 Rating as Source of Information About Best Practices Compared to Other Sources

Responses to the item "How would you rate the BP Blogger as a source of best practice information compared to other sources?" are summarized in Figure 4.2. In the

combined sample, the most frequent ratings were good (n=88, 49.2%) or excellent (n=76, 42.5%). There was a trend for managers, compared to those in direct care role, to rate this item more highly (46.3% and 31.9% excellent, respectively).

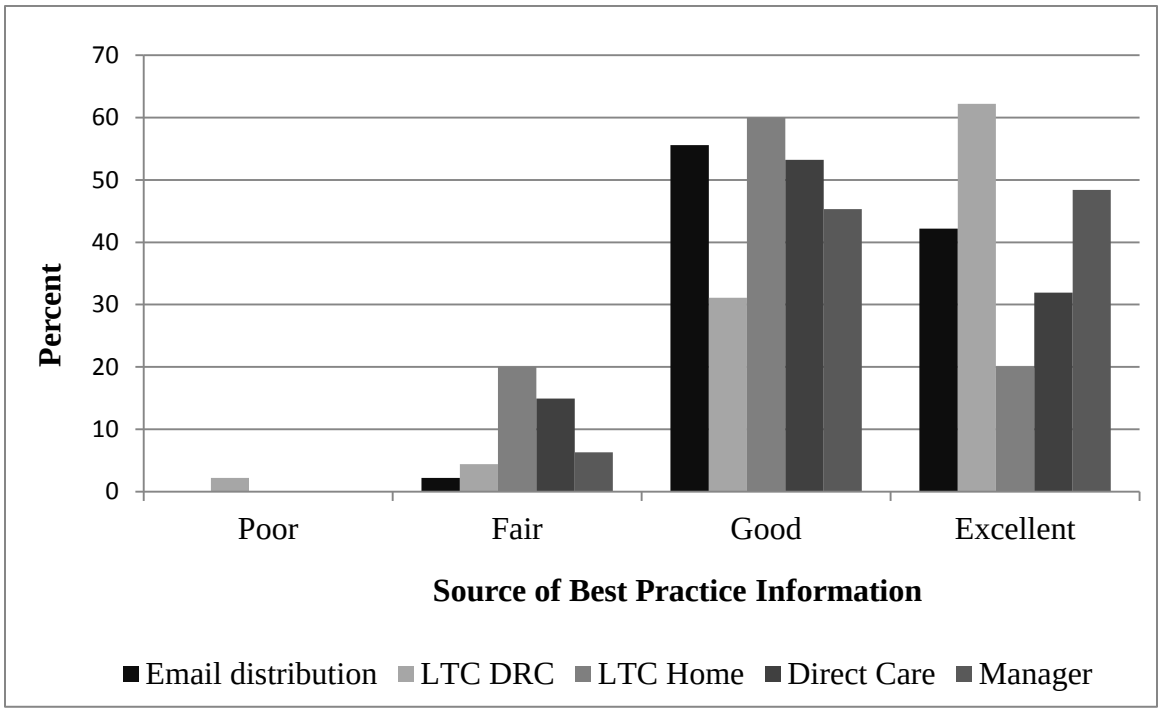

Figure 4.2 Rating as a Source of Information About Best Practices Compared to Other Sources by Sample and Direct Care or Management Role

4.4.4 Style of the BP Blogger

In the combined sample, the most frequently endorsed ratings of the style (colour, print, and font) of the BP Blogger were good (n=88, 49.2%) and excellent (n=76, 42.5%). There was a trend for managers to rate the style more highly than direct care staff (46.3% and 34% excellent, respectively). There were 467 comments coded to sixteen subcategories under Perceived attributes, to capture impressions of the BP Blogger.

There were 12 comments coded to the subcategory, *Colour negative*, four of which were from Direct Care. Some respondents found it to be pleasing in colour but too costly to print in colour and recommended a black and white format, while some respondents had only seen it in black and white, which may affect the perception of the tool.

There were 13 responses coded to *Colour, positive*, four of which were from direct care providers. These comments were all positive regarding the current colourful format, for example, "I like that it's colourful, makes person want to read it" (Management).

There were ten references coded to *Font, negative*, four of which were from Direct care. These responses included recommendations to make the font larger, or "for senior readers" (ID 65, Management Role). There was one respondent whose comment was coded under *Font, positive*, regarding the existing use of various fonts, "maintain bright colours and various fonts to make it eye catching for readers" (Not Direct Care).

Generally, respondents indicated that they liked the colourfulness. Recommendations included increasing font size, and producing a version that looked good in black and white related to cost of colour printing, and for dissemination to those who do not have email.

4.4.5 Readability Compared to Other Sources of Best Practice Information

Responses to the item "Which word is most descriptive of how readable the BP Blogger is compared to other sources of best practice information?" are summarized in Figure 4.3. In the combined sample, an equal number of respondents rated the BP Blogger as good (n=79, 44.1%), and excellent (n=79, 44.1%). There was a trend for

managers and DRCs to rate the readability more highly than respondents in direct care role (51.6%, 57.8%, and 31.9% rated excellent, respectively).

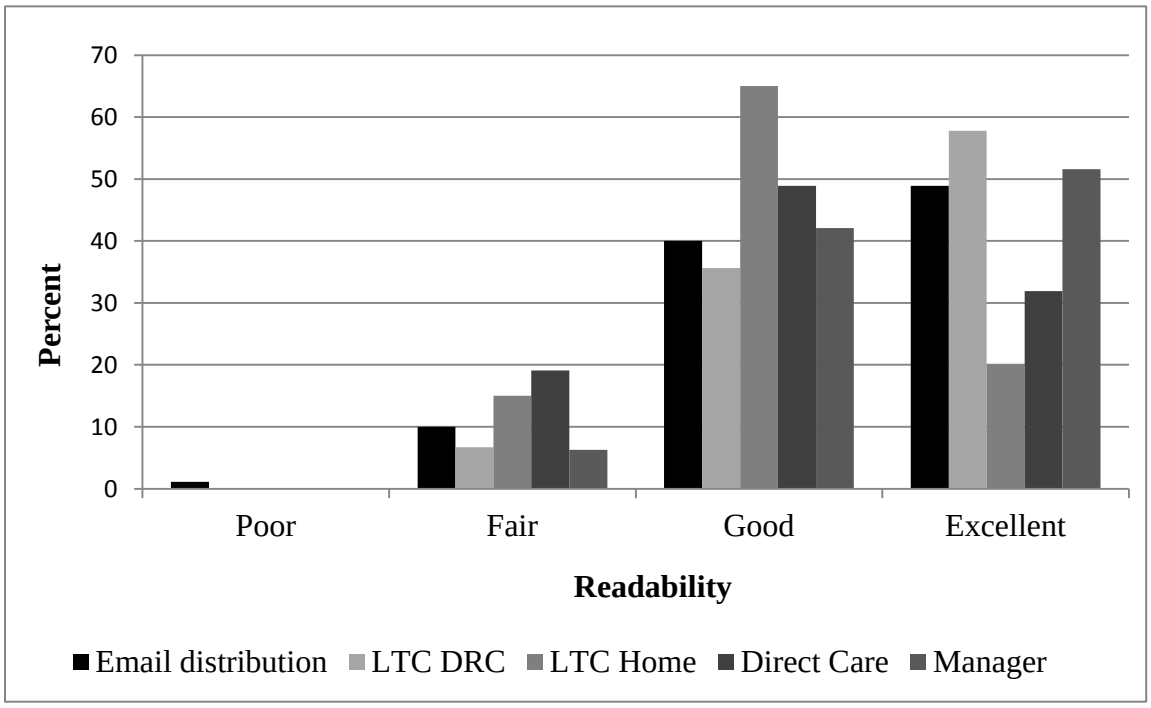

Figure 4.3 Rating of Readability Compared to Other Sources of Best Practice Information by Sample and Direct Care or Management Role
Note: One response is missing from the email distribution sample

Content analysis under *Perceived attributes* also provided information regarding readability. There were nine comments coded to, *Readability, negative*, three of which were management, and the rest were not direct care staff. The comments related to the amount of content and level of difficulty to read. There were 25 comments coded to *Readability positive*, four of which were comments from direct care staff. These were positive comments about ease of readability, simplicity, and positive comments regarding the fact that the newsletter can be read in a short time frame.

There were 30 responses to *Density negative*, of which six were from direct care providers. This subcategory included responses regarding the perceptions of the newsletter being somewhat busy, dense, or crowded, with some recommendations to decrease the density:

"Sometimes the information located in the content is dense (too thick). For students and PSW practitioners who are ESL, sometimes difficult for them to read and understand" (Not Direct Care).

There were four comments coded to *Density, positive*, two of which were management, and the others not direct care staff. These respondents commented positively on the compact and concise nature of the BP Blogger: "I find it entertaining and jam-packed. I have heard some feedback that it is too "busy" and crowded. It is a matter of preference" (Not Direct Care).

The ratings of readability of the BP Blogger compared to other sources in the quantitative analysis were equally good, and excellent. Most respondents in qualitative comments reported that they found the newsletter to be a compact, quick read, however there were also respondents who recommended decreasing the density, to make it easier for those with lower literacy or education levels to understand.

4.4.6 Length of the BP Blogger

Responses to the item "How would you describe the length of the BP Blogger?" are summarized in Figure 4.4. In the combined sample, 159 (88.8%) respondents rated the length to be just right. In the subsamples, the frequency of rating "just right" varied from 82.5% to 94.4%.

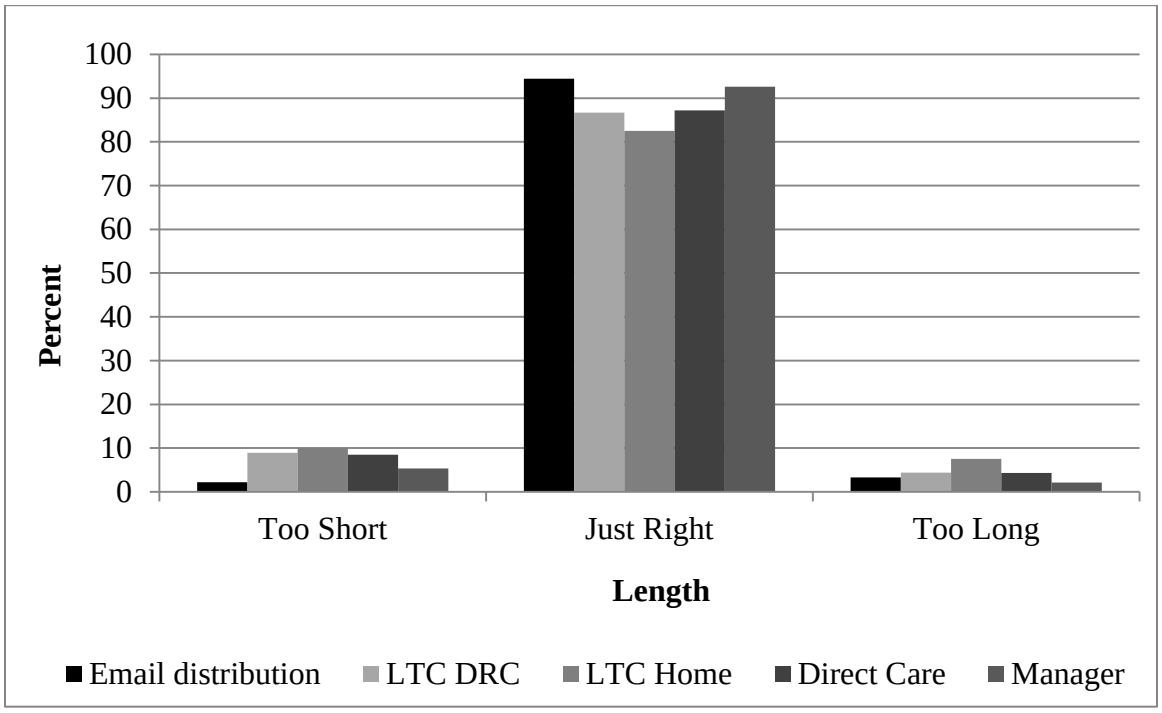

Figure 4.4 Rating of Length of BP Blogger by Sample and Direct Care or Management Role

In the content analysis, consistent with the quantitative responses, there were few comments coded to *Length, negative*, one of which was direct care staff. There were four comments recommending one page in length, one recommending it be longer, and another comment recommended providing more information with it for educational purposes. There were 15 comments coded to *Length, positive* with one comment from Direct Care. Respondents commented on the length being perfect, and the fact that it is a quick read.

There were 11 comments coded to the subcategory *Different Formats*, with two of the comments from direct care staff. Some respondents commented on developing issues for different target audiences, as well as recommending features to enhance education

use, “Do one that’s more specific to families pressing issues. Also a French version would be appreciated to save time (have to translate)” (Management Role).

4.4.7 Usefulness of BP Blogger for Practice

Responses to the item “How would you describe the usefulness of the BP Blogger for your practice?” are summarized in Figure 4.5. Most frequently, the respondents rated the BP Blogger’s usefulness for practice as good. Managers most frequently rated usefulness as good (n = 53, 55.8%) followed by excellent (n=33, 34.7%), with similar proportions among direct care staff (good, n=27, 57.4%; excellent, n=14, 29.8%).

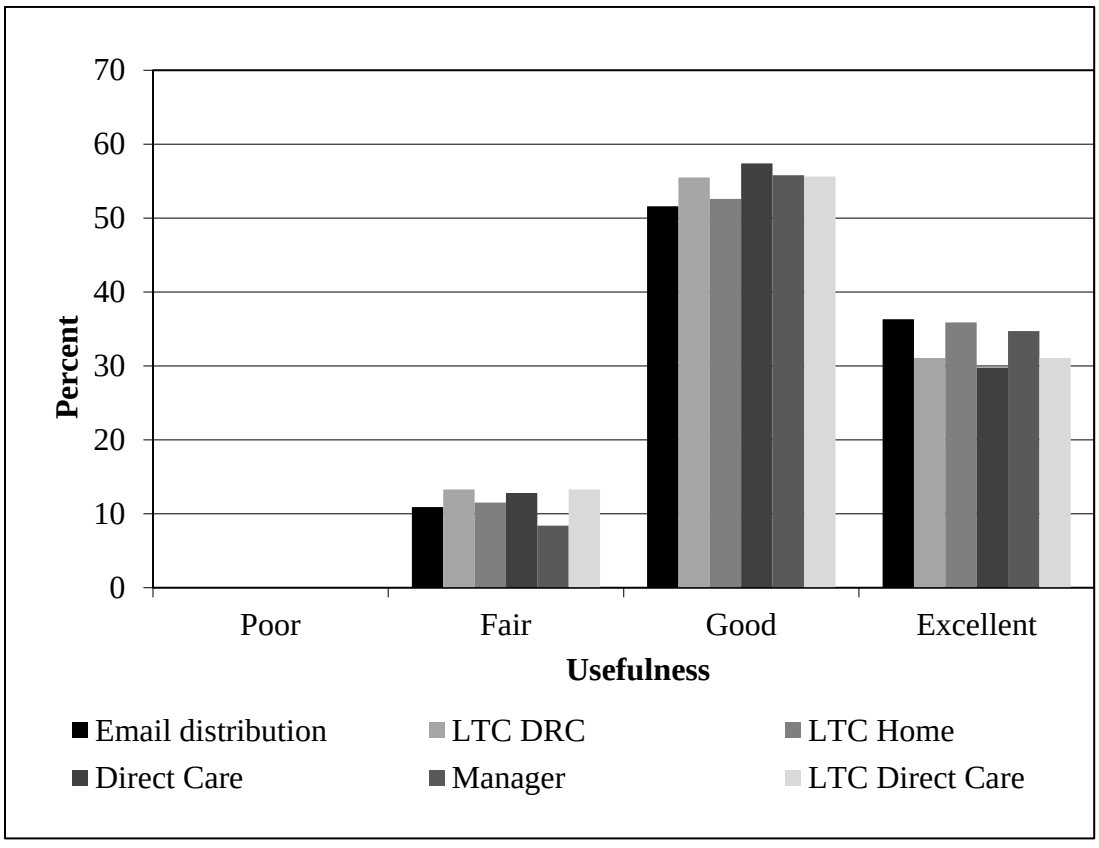

Figure 4.5 Rating of Usefulness of the BP Blogger for Practice by Sample and Direct Care or Management Role

The BP Blogger is generally very positively received, as demonstrated in both the quantitative and qualitative data, with the highest number of comments in the qualitative data related to relevance. Comments regarding colour were divided. Some comments were related to the cost of colour printing which is a barrier in LTC, and some respondents had not seen it in colour. Access to the BP Blogger in colour may affect the impression as well as readability of the newsletter. There were comments regarding density, with some recommendations to simplify the content.

Qualitative and quantitative results show that respondents thought the length was perfect, and many had positive comments for the author that they love the newsletter, and would like increased access, more formats, and issues for senior readers. The ratings of usefulness were generally good and excellent, and examples were given as to how the BP Blogger was used in practice, which is discussed later under 4.5 Findings for Research Question *4. How is the BP Blogger used in Practice?*

4.4.8 Relationship between Value for Content and Disseminating the BP Blogger

Table 4.15 is a contingency table, showing the relationship between rating of value for content (fair, good, excellent) and categories of the number of people respondents typically share the BP Blogger with (none; 1 to 10; 11-20; 21-30; 31-100; and > 100). A small number of participants rated the content as fair (n = 10), resulting in small or zero cells in the contingency table. Thus, for statistical analyses, the fair and good categories were collapsed. Participants who rate the value of the content of the BP Blogger as excellent are statistically significantly more likely to share the BP Blogger

with more people, than those who rate it as fair or good (χ^2 Linear-by-Linear Association = 17.1, df 1, $p < .001$).

Table 4.15

Relationship Between Value for Content and Disseminating the BP Blogger

With how many people do you typically share the BP Blogger?	Which word is most descriptive of the value you would give to the content of the BP Blogger?		
	Fair (n = 10) n (% of column)	Good (n = 90) n (% of column)	Excellent (n = 76) n (% of column)
None	3 (30.0)	14 (15.5)	4 (5.3)
1-10	4 (40..0)	37 (41.4)	16 (21.0)
11-20	0	11(12.2)	11 (14.5)
21-30	1 (10.0)	6 (6.7)	14 (18.4)
31-100	0	17 (18.9)	13 (17.1)
> 100	2 (20.0)	5 (5.5)	18 (23.7)

Note: Kendall's tau c = .279, $p<0.001$. Due to large number of cells with small or zero value, fair and good were collapsed in one category for statistical testing. The Chi-square test of linear-by-linear association was 17.1, df 1, $p < .001$.

4.4.9 Relationship between Value for Content and Who the BP Blogger is Shared with

Table 4.16 details the data compiled from ten, three by two contingency tables to determine whether there is a relationship between respondents' rating of the value of the BP Blogger and with whom it was shared. Each row presents data from a contingency table, showing participants who indicated that they typically shared that BP Blogger with that category of recipient. Participants who rate the BP Blogger highly are statistically significantly more likely to share the BP Blogger with someone than to not share it (χ^2 = 13.2, df 2, p = .001). Participants who rate the BP Blogger more highly are statistically significantly more likely to share with managers (χ^2 = 6.8, df 2, p = .034), with educators (χ^2 = 9.1, df 2, p = .01), and with volunteers (χ^2 = 9.8, df 2, p = .007). Rating of value of content was not associated with likelihood of sharing the BP Blogger with unregulated care providers or professional staff.

Table 4.16

Relationship Between Value for Content and Who the BP Blogger is Shared With

Who have you typically shared the BP Blogger with?	Which word is most descriptive of the value you would give to the content of the BP Blogger?			
	Fair n = 10 n (%)[1]	Good n = 89 n (%)[1]	Excellent n = 76 n (%)[1]	Total n = 175 n (%)[1]
Nobody **	4 (40.0)	12 (13.5)	3 (3.9)	19 (10.9)
Unregulated care providers	6 (60.0)	47 (52.8)	51 (67.1)	102 (58.3)
Nurses, RN/RPN, or Allied Health Professionals	4 (40.0)	64 (71.9)	62 (81.6)	132 (75.4)
Management*	1 (10.0)	29 (32.6)	40 (52.6)	73 (41.7)
Educators **	1 (10.0)	17 (19.1)	29 (38.2)	47 (26.9)
Students	0	22 (24.7)	22 (28.9)	45 (25.7)
Residents or patients	0	6 (6.7)	9 (11.8)	15 (8.6)
Families	0	14 (15.7)	13 (17.1)	27 (15.4)
Volunteers **	0	4 (4.5)	14 (18.4)	18 (10.3)
Professional organizations		5 (5.6)	11 (14.5)	16 (9.1)

Note: Compiled data from ten three by two contingency tables comparing participants rating of the value of the BP Blogger content (columns) and their reports of sharing it with ten categories of recipients of it (rows). Each row is respondents who indicated that they share the BP Blogger with the category of recipient.

[1] Percentages are for column percent within each of the individual contingency tables represented in each row.

* Pearson Chi-Square $p \leq .05$ ** $p \leq .01$. Responses were missing from 4 participants.

4.4.10 Relationship Between Value of Content of BP Blogger and Preferences for Modes of Receiving Best Practice Information

Table 4.17 is a data compiled from eight, three by two contingency tables, showing the relationships between respondents' rating of the value of the BP Blogger and their preference for receiving best practice information in each of eight formats. Each row presents data from a contingency table, showing participants who indicated that they that they prefer the particular format for receiving best practice information. None of the associations was statistically significant. There were two trends for significance. Participants who rated the value of the BP Blogger as fair, were more likely than other participants to indicate that they would like to receive best practice information in the form of printed educational materials in the workplace ($\chi^2 = 4.9$, df 2, $p = .08$). Participants who rated the value of the BP Blogger more highly were more likely to indicate that they would like to receive best practice information in the form of on-line educational materials ($\chi^2 = 5.3$, df 2, $p = .07$).

Table 4.17

Relationship Between Value for Content and Preferences for Sources of Best Practice Information

In what format would you like to receive information about best practices?	Which word is most descriptive of the value you would give to the content of the BP Blogger?			
	Fair n = 9 n (%)	Good n = 90 n (%)	Excellent n = 74 n (%)	Total n = 173 n (%)
One to One discussions	2 (22.2)	10 (11.1)	9 (12.2)	21 (12.1)
Meetings	2 (22.2)	16 (17.8)	15 (20.3)	33 (19.1)
Workshops	5 (55.6)	37 (41.1)	31 (41.9)	73 (42.2)
Printed educational materials in the workplace [1]	7 (77.8)	37 (41.1)	37 (50.5)	81 (46.8)
Journals	2 (22.2)	13 (14.4)	18 (24.3)	33 (19.1)
Electronic Newsletters	4 (55.6)	63 (70.0)	59 (79.7)	127 (73.4)
Webinars	3 (33.3)	32 (35.6)	34 (45.9)	69 (39.9)
On-line educational modules[2]	3 (33.3)	36 (40.0)	42 (56.8)	81 (46.8)

Note: Compiled data from ten three by two contingency tables comparing participants rating of the value of the BP Blogger content (columns) and their reports of preference for format for receiving best practice information (rows). Each row is respondents who indicated that they prefer the category of format.

[1] Trend for association, χ^2 4.9, df 2, p = .08

[2] Trend for association, χ^2 5.3, df 2, p = .07

Table 4.18 shows the proportion of respondents who indicated a preference for receiving information about best practices in the format of an electronic newsletter. This preference was most frequently reported in LTC DRC sample (n=38, 84.4%) and least frequently in the LTC home sample (n = 22, 56.4%) (χ^2 9.5, df 3, p = .02). The table also shows the relationship between work role (direct care or not) and preference for receiving best practice information in the format of an electronic newsletter. Respondents in the direct care role were significantly less likely to prefer this format (n = 28, 60.9%) than those who were not in the direct care role (n = 99, 78.0%) (χ^2 =5.0, df 1, p = .02).

Table 4.18

Preference for Receiving Best Practice Information in the Form of Electronic Newsletters, by Sample and Direct Care Role

	Preference to receive best practice information in the form of electronic newsletters	
	Yes n (% of row)	No n (% of row)
Sample Source[1]		
Email Distribution	66 (75.0)	22 (25.0)
Web-site Pop-up	2 (100)	0
LTC DRC	38 (84.4)	7 (15.6)
LTC Home	22 (56.4)	17 (43.5)
Work Role[2]		
Direct Care	28 (60.9)	18 (39.1)
Not Direct Care	99 (78.0)	28 (22.0)

Note: [1] χ^2 9.5, df 3, p = .02

[2] χ^2 5.0, df 1, p = .02

Table 4.19 displays frequency of indicating a preference for receiving best practice information from each of eight possible sources (e.g., one-to-one discussion, meetings, workshops, etc.) by work role of respondents (direct care or not). The most frequently endorsed preferred source of information was electronic newsletters (n = 127, 73.4%), followed by on-line educational materials (n = 81, 46.8%), printed education materials in the workplace (n= 81, 46.8 %), and workshops (n=74, 42.8 %). Participants who provide direct care are statistically significantly more likely to endorse workshops as a preferred source of best practice information (n = 26, 56.5%) compared to those who do not provide direct care (n = 48, 37.8%, $\chi^2 = 4.8$, df 1, p = .03) and less likely to endorse electronic newsletters as a preferred source of best practice information (n = 28, 60.9%) in comparison to those who do not provide direct care (n=99, 78%, $\chi^2 = 5.05$, df 1, $p \leq .025$).

Table 4.19

Preference for Formats to Receive Information About Best Practices Comparing Direct Care vs. Not Direct Care Work Role

In what format would you like to receive information about best practices?	Work Role		
	Direct Care n=46 n (%)	Not Direct Care n =127) n (%)	Total n = 173 n (%)
One to one discussions	9(19.6)	12 (9.4)	21(12.1)
Meetings	13(28.3)	21 (16.5)	34(19.7)
Workshops	26(56.5)*	48 (37.8)	74(42.8)
Printed educational materials in the workplace	25(54.3)	56(44.1)	81(46.8)
Journals	8(17.4)	26(20.5)	34(19.7)
Electronic Newsletters	28(60.9)*	99 (78.0)	127(73.4)
Webinars	16(34.8)	54(42.5)	70(40.5)
On-line educational modules	21(45.7)	60(47.2)	81(46.8)

Note: Compiled data from eight two by two contingency tables comparing direct vs. not direct care role (columns) and preference for receiving best practice information in each of eight formats. Each row is respondents who indicated that they prefer the category of format.

* indicates that the Pearson Chi-Square test determined significance of $p \leq .05$

4.4.11 Qualitative Responses Regarding Most Frequent Source of Best Practice Information

Forty six direct care participants provided usable answers to the question about most frequent source of best practice information. Eighty nine respondents who were not direct care provided usable responses to this question, and 65 who were in a manager roles provided usable responses to this question. In total, there were 283 references coded under 13 sub categories for the responses to *What is your most frequent source of best practice information?* The reported sources identified by respondents were; (1) professional organizations (n = 78); (2) workplace (n = 62); (3) Internet and web-sites (n = 42); (4) Printed Educational Materials (n = 18); (5) One to one discussions (n = 16); (6) Email (n = 15); (7) Meetings (n = 12); (8) Journals, literature searches (n = 12); (9) Workshop (n = 12); (10) Media (n = 5); (11) Newsletters (n = 5); (12) BP Bloggers (n = 4) (13) Webinars (n = 2).

The most frequently reported source of best practice information was that of *Professional organizations* and the most frequently reported organization in this subcategory was the RNAO (n = 33). Other organizations included OPSWA (Ontario Personal Support Worker Association), RPNAO (Registered Practical Nurses Association of Ontario), the College of Nurses of Ontario, and the Ministry of Health and Long Term Care.

In the *Workplace* subcategory, 43 respondents reported receiving best practice information in the *Workplace* from various sources such as management, e.g. “What they tell us” (Direct care), via policies and procedures, meetings, in-services, and internal computer systems such as ‘docushare’.

Text coded to *Internet and Web-sites* were comments about active searching on the internet or searching specific sites such as the RNAO. The subcategory *Printed Educational Materials*, included books, journals, "hard copy material" (Management Role), and "printed educational materials at work" (Direct care). The subcategory of *One to one discussions*, included comments about seeking advice from colleagues when working together, and about 'specialists' such as the RNAO Best Practice Coordinator, "Nurse Practitioner, Psychogeriatric Resource Consultant" (Direct Care).

In comments coded to *Email*, respondents reported workplace email bulletins or emails from the MOHLTC, as a source of best practice. Comments coded to *Meetings*, included respondents reports of receiving best practice information most frequently from "team meetings" (Direct care), and for example "best practice meetings through RNAO (DRC meetings)" (Management role). *Journals, literature searches*, was a subcategory established to capture respondents' reports of getting best practice information from journal articles, literature reviews, nursing magazines, and publications.

The subcategory W*orkshop,* captured comments in which respondents reported "workshops and in-services" (ID 189, Not Direct Care), as well as conferences as their most frequent source of best practice information. For example, one respondent reported their most frequent source as "[Gentle Persuasive Approaches] GPA, Montessori Training, Palliative Care Training" (ID 181, Direct Care).

Media was established as a subcategory for general comments such as the news, or the paper. One respondent stated their most frequent source was the "news, newspapers, internet at home" (ID 298, Direct Care), and another reported receiving best

practice information most frequently from "articles, magazines. Other publications" (Not direct care).

There were some responses coded to the subcategory *Newsletter*. It is unknown whether the reports of "newsletter" (Direct care) were electronic or paper newsletters. Another subcategory was established to capture responses that reported the BP Blogger as their most frequent source of best practice information. There were four comments coded to the subcategory *BP Blogger,* For example one respondent reported their most frequent source as "Workplace/BP Blogger" (ID 245, Direct care), and another the "Internet and the BP Blogger": (ID 129, Management role). There were two comments regarding W*ebinars* as the most frequent source of best practice. One manager reported, "I work in the Finance Dept. so most information we need comes from Ministry through email web education sessions" (ID 212, Management role).

Quantitative results show respondents' preference for receiving best practice information in the format of electronic newsletters, online information, and Printed Educational Materials, with some differences in preference by work role. Qualitative responses provide information regarding the respondents' most frequent source of best practice information. Many respondents receive information through their professional organizations and it is unknown whether this is through email, internet searches, or printed publications. The workplace appears to be an important source of best practice information especially for direct care staff, who may have limited time, or no access to email, and may have no communication from professional organizations. Online resources were also reported as a frequent source of best practice information.

4.5 Findings for Research Question 4. How is the BP Blogger used in Practice?

Frequencies of responses to relevant survey questions regarding usefulness, and how respondents use the information as well as qualitative responses coded to the category *Use in Practice,* were examined to provide answers to this question.

As described under section 4.4.8, most participants rated the usefulness of the BP Blogger as good (n=94, 52.5%), or excellent (n=62, 34.5%). Frequencies of responses to eight categories in the question "Which of the following items apply to how you use information in the BP Blogger?" were determined by sample mode, work role, and work setting.

4.5.1 Use of Information by Sample, Role, and Setting

The most frequently endorsed use of the BP Blogger in the combined sample (Table 4.20) was "education tool for staff" (n=148, 82.7%), followed by "improve clinical knowledge" (n=129, 72.1%), and "helps me provide better care for my residents/clients" (n=90, 50.3%). There were differences between the sample modes. Participants in the email distribution sample and DRC sample most frequently reported using the BP Blogger as an education tool for staff (n=78, 85.7%, n=40, 88.9%, respectively), followed by improving clinical knowledge (n=60, 65.9%, n=35, 77.8%, respectively). For the email distribution sample, the next most frequently endorsed use was "education tool for students" (n = 37, 40.7%). In the DRC sample, the next most frequently endorse use was "helps me provide better care for my residents/clients) (n=30, 66.7%). In the LTC home sample, the most frequently reported use was "improve clinical knowledge" (n=32, 80%), followed by "education tool for staff" (n=28, 70%), and "helps me provide better care for my residents/clients" (n=26, 65.0%). Respondents in the LTC

DRC sample endorsed more of the uses, with all categories endorsed by at least 40% of the respondents.

Table 4.20

How Respondents Use Information in the BP Blogger

How you use information in the BP Blogger	Sample				
	Combined Sample n = 179 n (%)	Email Distribution n = 91 n (%)	Web-site Pop up n =3 n (%)	LTC DRC n = 45 n (%)	LTC Home n = 40 n (%)
Improve clinical knowledge	129 (72.1)	60 (65.9)	2 (66.7)	35 (77.8)	32 (80)
Answer a question I have	68 (38.0)	27 (29.7)	2 (66.7)	26 (57.8)	13 (32.5)
Helps me provide better care for my residents/clients	90 (50.3)	33 (36.3)	1 (33.3)	30 (66.7)	26 (65.0)
Education tool for staff	148 (82.7)	78 (85.7)	2 (66.7)	40 (88.9)	28 (70.0)
Education tool for families	66 (36.9)	30 (33.0)	2 (66.7)	19 (42.2)	15 (37.5)
Education tool for students	72 (40.2)	37 (40.7)	2 (66.7)	22 (48.9)	13 (32.5)
Policy development	45 (25.1)	20 (22.0)	2 (66.7)	21 (46.7)	4 (10.0)
Do not use it	3 (1.7)	1 (1.1)	0	1 (2.2)	1 (2.5)
Missing	3 (1.7)	1 (1.1)	1 (33.3)	1 (2.2)	0
Other	2(1.1)	0	0	2 (4.4)	0

Note: n and percentage endorsing each category of use shown for each sample source.

Table 4.21 shows how the information in the BP Blogger was used in categories of respondent work role (direct care, management, consultation, and education) and in the LTC work setting. Use of the information varies with position. Respondents in the direct care role most frequently reported using the information to "improve clinical knowledge (n = 39, 83%), with 34 (72.3%) endorsing both "education tool for staff" and "helps me provide better care for my residents/clients". Point of care staff appear to use it most frequently to improve their knowledge. This makes sense as the newsletter was designed for this purpose. They agree with managers that the BP Blogger is useful for an education tool for staff, although they rank it slightly lower as an education tool than respondents in the management, consultation and education work roles who most frequently reported using information as "education tool for staff" (n = 84, 88.4%; n = 28, 90.3%; and n = 39, 82.9%, respectively. This is reflective of the role of managers, consultants and educators, to pass on information to educate staff, and optimize evidence-based practice. Respondents in LTC work settings most frequently reported using the information in the BP Blogger to "improve clinical knowledge" (n=32, 80%), followed by "education tool for staff" (28, 70.0%), and "helps me provide better care for my residents/clients" (n=26, 65.0%).

Table 4.21

How Information in the BP Blogger is Used, by Work Role and Setting

Which of the following items apply to how you use information in the BP Blogger?	Sample					
	Combined Sample n = 179 n (%)	Direct Care Work Role n = 47 n (%)	Manage-ment Work Role n = 95 n (%)	Consul-tation Work Role n = 31 n (%)	Edu-cation Work Role n = 35 n (%)	LTC Work Setting n = 157 n (%)
Improve clinical knowledge	129 (72.1)	39 (83.0)	72 (75.8)	17 (54.8)	26 (74.3)	116 (73.9)
Answer a question I have	68 (38.0)	20 (42.6)	35 (36.8)	12 (38.7)	14 (40.0)	65 (41.4)
Helps me provide better care	90 (50.3)	34 (72.3)	44 (46.3)	8 (25.8)	17 (48.6)	82 (52.2)
Education tool for staff	148 (82.7)	34 (72.3)	84 (88.4)	28 (90.3)	29 (82.9)	133 (84.7)
Education tool for families	66 (36.9)	17 (36.2)	35 (36.8)	9 (29.0)	15 (42.9)	61 (38.9)
Education tool for students	72 (40.2)	16 (34.0)	39 (41.1)	12 (38.7)	19 (54.3)	59 (37.6)
Policy development	45 (25.1)	8 (17.0)	30 (31.6)	6 (19.4)	10 (28.6)	42 (26.8)
Do not use it	3 (1.7)	1 (2.1)	1 (1.1)	0	0	2 (1.3)
Missing	3 (1.7)	0	1 (1.1)	0	0	1 (0.6)
Other	2 (1.1)	1 (2.1)	2 (2.1)	0	0	2 (1.3)

One of the coding categories developed from Rogers' theory (2003) to capture the examples of the respondents' reports of use or reinvention, was entitled *Use in Practice*. There were 73 participants that responded to Q. 24. *Do you have examples of how you or others use the BP Blogger?* Responses to other questions that indicated how respondents used the BP Blogger were also coded under this category. In all, 211 responses were coded under *Use in Practice* into seven subcategories: (1) *Staff education, enhance attitudes, skills, knowledge; (2) Resource for the workplace; (3) Discussion in meetings; (4) Care planning; (5) Policy and procedures; (6) Education of Residents and family*. There were some statements that were coded to multiple categories.

The most frequent report of the use of the BP Blogger in the qualitative data was for educational purposes. There were 60 references coded to *Education of staff, enhance attitudes, skills, knowledge.* It appears that managers do not necessarily use the information themselves, but they post or disseminate to their staff to communicate best practices. For example, one manager provided the example of use as an "education tool for staff - I come up with a few questions based on it and use it to teach staff (unregulated staff & nurses)" (Management).There were eighteen comments from direct care providers coded to this subcategory. For example, "The BP Blogger helps us to provide excellent care to clients/residents" (ID 245, Direct Care).

There were 29 references coded to *Resource for the Workplace,* three of which were from direct care staff. This subcategory included comments about sharing it with staff, residents, and family. This category differed from the category of *Education of staff, enhance attitudes, skills knowledge,* **,** in that education refers to more active

dissemination of information as compared to providing printed educational materials as a resource, for example by posting, or developing binders for reference as needed.

There were seventeen references coded to the subcategory *Discussion in Meetings*, two of which were from direct care staff, and the rest from managers. The BP Blogger was described as being used in regular meetings and in meetings about quality improvement and policy development. An example of a statement from one respondent that was coded to several sub-categories in response to the question regarding use of the BP Blogger, was the statement: "Print out copies and put them out, at meetings, see if it fits in with regulations (LTC Act), as a tool for my own practice" (Management). Parts of this statement were coded to, *Resource for the Workplace, Discussion in Meetings,* as well as *Staff Education, enhance attitudes, skills, knowledge.*

Ten responses were coded into the subcategory *Care Planning*, six of them from direct care respondents. This category captured examples of active use of the information in practice to affect patient care. For example, "Resident was having sleep-wake disturbances. Referred RN & RPN to information from BP Blogger to improve care and strategies being used" (other than direct care). There was an indication that use depended on the BP Blogger topic.

There were ten references coded to the subcategory *Policy and procedures,* two of which were from direct care staff. There were seven comments coded to using the BP Blogger for *Education of Residents and Family* with three of the comments from direct care staff.

The reports from the qualitative data are consistent with quantitative data regarding the use of the information in the BP Blogger. Managers use the BP Blogger as

an educational tool; they disseminate and post the BP Blogger in the workplace to make it available for the use of staff. There are a few comments regarding use of the BP Blogger in meetings, for care planning, policy development and dissemination to residents and families. Direct care staff report use for care of residents, sharing with families, and personal use.

4.5.2 Relationship Between Perceived Value of the BP Blogger as a Source of Best Practice Information and Use of the Information.

Table 4.22 describes data from seven three by two contingency tables to determine if there was a relationship between how respondents rate the value of the BP Blogger in comparison to other resources, and how the information is used. Perceived value of the content of the BP Blogger was significantly related to use of the BP Blogger for all categories except "improve my general knowledge". Participants who rated the BP Blogger more highly were significantly more likely to use it to answer a question they have (χ^2=6.8, df 2, p = .03), to help them provide better care for their residents/clients (χ^2=7.9, df 2, p = .02), as an education tool for staff (χ^2 = 11.4, df 2, p = .003), as an education tool for families (χ^2 = 7.5, df 2, p = .02), as an education tool for students (χ^2 =7.8, df 2, p = .02),and for policy development (χ^2 =11.7, df 2, p = .003).

Table 4.22

Relationship Between Perceived Value of the BP Blogger as a Source of Information Compared to Others and Use of the BP Blogger

Which of the following items apply to how you use information in the Bp Blogger?	How would you rate the BP Blogger as a source of information about best practices compared to other sources?			
	Fair n = 10 n (%)	Good n = 90 n (%)	Excellent n = 75 n (%)	Total n = 175 n (%)
Improve clinical knowledge	6 (60.0)	63 (70.0)	59 (78.7)	128 (73.1)
Answer a question I have*	3 (30.0)	27 (30.0)	37 (49.3)	67 (38.3)
Helps me provide better care for my residents/clients*	6 (60.0)	37 (41.1)	47 (62.7)	90 (51.4)
Education tool for staff**	7 (70.0)	69 (76.7)	71 (94.7)	147 (84.0)
Education tool for families*	3 (30.0)	26 (28.9)	37 (49.3)	66 (37.7)
Education tool for students*	2 (20.0)	30 (33.3)	39 (52.0)	71 (40.6)
Policy development**	1 (10.0)	15 (16.7)	29 (38.7)	45 (25.7)

Note: Compiled data from seven three by two contingency tables comparing participants' rating of the value of the BP Blogger in comparison to other sources (columns) and their reports of how they use the information in practice in each of seven categories of use (rows). Each row is respondents who indicated that they prefer the category of format**.** * indicates that the Pearson Chi-Square test determined statistical significance of $p \leq .05$, ** $p \leq .01$.

4.6 Summary

Chapter four presented findings from quantitative and qualitative data, answering the four research questions: (1) What is the dissemination pathway of the BP Blogger in Long Term Care? (2) Does the BP Blogger reach the point of care staff? (3) How is the BP Blogger perceived by people who receive it?, and (4) How is the BP Blogger used in practice? Frequencies of responses to survey questions and findings from qualitative content analysis were described. The next chapter will discuss the findings, and make recommendations for future practice and research.

Chapter 5

Discussion and Conclusions

Findings have been presented for the quantitative and qualitative analysis of the data from the BP Blogger study. This section will focus on a discussion of the researchers' interpretation of the findings, given the responses, context of LTC, and existing literature, as well as the benefits of using Rogers' Diffusion of Innovation Theory (2003) for the development of the survey and analysis of the results. Methodological strengths and weakness of the study will be discussed. The researcher will make recommendations for practice and policy regarding KT and electronic dissemination in the context of LTC, as well as recommendations for future research.

5.1 Dissemination Pathway

Although originally targeted to meet the information needs of LTC home staff, the findings demonstrate that the BP Blogger reaches interdisciplinary staff in diverse roles, and settings such as LTC, acute, chronic community care, and educational institutions. The newsletter is disseminated interpersonally, electronically, through mass modes of communication, as well as in the workplace. Ms. van der Horst's distribution list for the BP Blogger at the time of the study was approximately thirty people. These people in turn disseminate the newsletter to others. It is not possible to determine how many people it reaches, as responses to the survey represent only a fraction of people who would actually receive the BP Blogger. For example, people who receive paper copies of the BP Blogger would not likely have received invitations to participate in the survey, except for those working in the LTC home site that participated in the research.

Snowball sampling yielded 114 responses from the electronic dissemination, with one out of the province respondent. The web-site response in the BP Blogger study was poor, but this was expected, as typically two to five percent of people who log on to a site will fill out a pop up survey (Stephen Kingston, personal communication, Sept 29, 2009).

The response rate for the DRC telephone interview was 63.95%, which is a good response from a group of very busy professionals. It is consistent with response rates in Bostrom's (2006) study of registered nurses' use of research findings in the care of older people in which they had a 67% response rate. It is less than responses in the evaluation of Treatment Improvement Protocols (TIPs) reported by Hubbard and Mulvey (2003, p. 59), in which they had a response rate of 80.1%. They had an initial response rate of 49.4% with two survey invitations. However, they reached an 80.1% response rate with the use of mailed postcard reminders and follow up calls. The high rates of response in the TIPs study may be due to the number of invitations to participate, as well as reminders, and follow up calls by trained actors with excellent communication skills. The BP Blogger study had a fewer number of invitations and follow up contacts; research assistants were students, whose communication skills may have been less well developed than those of experienced professionals or trained actors. The results of the DRC telephone interviews also may not be representative of DRCs as a whole, as there may be more awareness of the BP Blogger in LHIN 4 because of Ms. van der Horst's role as the former LTC Best Practice Coordinator in the region.

The LTC home site that participated in the survey had a large staff (n=622) at the time of the survey. The response rate was 23% (n=143) despite the opportunity to enter a draw for a day off with pay. The largest proportion of these respondents was direct care

staff (n = 94, 65%). Dillman et al. (2009) recommend small tokens provided in advance of participation as an incentive or social exchange, to enhance participation. Given that there were 622 potential participants in the LTC home, the research funds for the BP Blogger study did not allow for a token in advance of completing the survey that may have potentially increased the sample size.

The response rate in the LTC home was lower than the reported response rate of 83.9% in Royle et al.'s (2002) study of LTC home staff participating in a questionnaire regarding information needs in LTC in the Hamilton region. Possible differences could be attributed to the relationship of the researcher with the home, modes of invitation and incentive to participate. Differences in the survey itself and the fact that it was a smaller facility that participated in the research in Royle et al.'s study may account for some differences in response rates. There may well have been differences in types of communication, the number of invitations issued to request participation, the culture of care, attitude towards research, and the fact that Royle et al. (2002) also ran focus groups in the nursing home, which would have increased the profile of the study and possible response to the questionnaire. Also, the challenges of complexity of care, staffing and time constraints in LTC homes a decade after Royle et al.'s study (2002), may affect the morale, and time staff have to complete surveys and therefore, respondent numbers. Berta et al. (2005) point to the increasing demands on LTC staff: "The population being cared for in LTC facilities has shifted in recent years with increasingly older residents with more complex care needs than was the case even ten years ago"(p. 284). Although the response rate was low from the LTC home site that participated in the research, the print format of the questionnaire enabled researchers to obtain feedback from direct care

staff that otherwise would not have had an opportunity to participate in the web based survey because of limited access to external email or the internet. The responses from the LTC home sample may not be generalizable to other staff in LTC homes because of the small proportion of responders.

The results demonstrate that the BP Blogger is diffusing through channels other than Ms. van der Horst. Managers report receiving the BP Blogger from more sources than point of care staff in LTC homes. This demonstrates different modes of receiving information in LTC depending on work role.

The email distribution sample and DRC samples were very similar in how they first heard about the BP Blogger, with respondents only slightly more likely to first hear about the BP Blogger through interpersonal communication, followed by email. LTC home respondents reported first hearing about the BP Blogger through the workplace strategies, and none of the respondents in the LTC home sample reported first hearing about it through email. There is a hierarchical dissemination from managers to point of care staff. There appeared to be less interpersonal communication associated with the dissemination to LTC home staff in the site that participated in the study.

Most respondents reported passing on the BP Blogger to several categories of people, with managers tending to pass on to more categories than direct care staff. This could be related to the perception of managers' role to disseminate information; their access to email, which increases the ability to pass on to more people; as well as the influence of the interpersonal communication (Rogers, 2003) regarding the importance and utility of passing on the newsletter. Those that rate the value of content more highly are statistically significantly more likely to share the BP Blogger with a higher number of

people, consistent with Rogers theory (2003) that perceptions of attributes influences the rate of diffusion.

Although there are varying rates of email and internet access for staff in LTC homes, the rate of computer access has increased dramatically in the last decade. Despite the increase in email access in LTC, the most frequently reported mode of receiving the BP Blogger in the LTC home sample was in paper format (87.5%), while fewer had received electronically (30.0%).

Royle et al. (2002) in their study of LTC home staffs' information needs, found that 15% of the respondents of interdisciplinary staff in the LTC home studied used a computer at work, and 4% used the internet. In the BP Blogger, study 76% of the staff working in the LTC home sample reported email access, 70% reported internet access at work, and 42.9% of the PSW/HCAs who had read and browsed the BP Blogger and participated in the survey, reported email access at work. In the LTC home studied, the high rates of email access reported may be may be internal email access. Out of the nursing staff, only charge nurses have access to external emails; nursing groups receive internal emails only, and dietary, housekeeping, laundry, maintenance, and volunteers have no internal email access (Director of Resident Care, personal communication, Oct. 25, 2012).

The researcher anticipated that lack of email access for point of care staff would be considered more of a barrier for dissemination of the BP Blogger than reported in the study. It appears that if participants value the BP Blogger as a source of best practice information, then they find a way of passing it on. In LTC homes, this is most often in print, posting, sending out in internal email, discussing at meetings, workshops, in-

services, and orientation. There were comments from participants regarding increasing email and computer access. The qualitative results are consistent with the quantitative results.

Factors to consider for lower rates of dissemination by point of care staff include the lack of time as well as lack of access to email, computers, or printers. Some respondents reported not wishing to duplicate dissemination. Other factors that may affect lower rates of dissemination by point of care than managers could be that they may not perceive it to be their role to use or disseminate research. This has been reported in other studies (Bostrom, 2006; Royle, 2002).

Some respondents commented on difficulty finding the newsletter on the web-site. The web-site is not the primary way that the BP Blogger is disseminated and relatively few people access it in this manner, as demonstrated with the web-site monitoring; quantitative data, in which less than half of the respondents had tried to access the BP Blogger on the internet; an comments indicating lack of awareness that it is available online. The low rates of access on the internet are consistent with the context of LTC; however, the availability on the internet does provide a point of access for best practice information for those seeking out the resource. Lavis et al. (2003) remark on the fact that infrastructure support such as newsletters and web-sites also may augment knowledge transfer efforts, but not replace interactive efforts to achieve knowledge translation.

Respondents made recommendations to make the BP Blogger easier to find on the web-site where it is located, developing a directory of issues, and having links to the BP Blogger on more web-sites. Recommendations to enhance dissemination included

sending it out through professional organizations; ensuring managers receive the newsletter, maintaining distribution lists, and increasing dissemination frequency and consistency, with reminders of past issues. These recommendations could be useful for marketing and dissemination of best practice information in electronic formats.

The DRCs in LHIN 4 may have a higher awareness, uptake, and higher dissemination of the BP Blogger than other regions because they know of Ms. van der Horst from her former role, as LTC Best Practice Coordinator in LHIN 4. According to Rogers' theory (2003), innovations diffuse through social channels, from respected sources, and through interpersonal communication. Ms. van der Horst in her former role would have been a champion to enhance the dissemination of the BP Blogger. She did presentations, and communicated to many people in the LTC system verbally, by email, and in workshops, affecting the dissemination and uptake of the BP Blogger in the region of LHIN 4.

In LTC, managers are the most likely people to receive the BP Blogger electronically. Managers are key champions for the dissemination of the BP Blogger in the hierarchical structure of LTC, and can tailor the distribution to the preferences of the staff and workplace context. People reached electronically disseminate the BP Blogger to networks, and can disseminate to colleagues, or broader audiences with the ease of electronic communication. The mode of delivery of the BP Blogger in LTC is most frequently in print format. This fits with the point of care staffs' preferences to receive information, in the form of printed educational materials, as well as the context of LTC where staff they have limited access to email and computers.

There are lower rates of dissemination by point of care staff. Some respondents spoke of time factors as a barrier to passing on the BP Blogger, and some respondents commented on the fact that a barrier to passing on the newsletter was that they did not wish to duplicate dissemination, which speaks to the volume of information and email that people receive and is consistent with Royle et al.'s (2002) and Bostrom et al.'s (2006) findings. Dissemination of information in the context of LTC with fewer resources in human as well as material resources is a challenge.

A strong trend emerged for registered health care staff to report professional organizations as their most frequent source of best practice information, such as the College of Nurses of Ontario, RNAO best practice guidelines, networks, the web, as well as individual literature searches. Many also recommended that dissemination of the BP Blogger be through professional organizations and web-sites. This demonstrates the importance of the RNAO best practice guideline project, professional bodies, networks, and electronic modes of dissemination of information for many staff, and is consistent with Rogers' theory (2003) of dissemination of innovations through social networks.

In the qualitative data, unregulated direct care providers reported that their most frequent source of best practice information was that provided to them at work through training materials, workshops, in-services, printed educational materials, the BP Blogger, and personal communication. Although the unregulated direct care staffs' stated preference for receiving information was in electronic format, the format in which they reported receiving best practice information is consistent with the context of LTC. It demonstrates the importance of workplace strategies to disseminate best practice information to unregulated staff. Topic summaries such as the BP Blogger can be

disseminated by champions and networks (Rogers, 2003) to enhance dissemination of best practice information.

Computer access, social media, and electronic means for disseminating information appear to be on the rise, and preferences for receiving information by electronic means are common in this study. Time is a factor in searching out best practice information (Bostrom et al., 2006; Thompson et al., 2005), and receiving best practice information electronically allows the recipient to read the information when they have time, at their own pace. Another factor to consider is that peoples' communication with their own friends and family are through social media, and they may perceive electronic communication as efficient and satisfying, depending on the source of the communication.

5.2 Awareness of the BP Blogger

The study found that the BP Blogger reached many health care providers in different roles, and settings, including point of care staff. Respondents reported receiving it from many sources. Managers reported receiving it from more sources than point of care staff. The awareness of the newsletter diminished closer to point of care staff. Most of the DRCs, were aware of the BP Blogger, while in the LTC site that was active in disseminating the BP Blogger, there were still a lot of people who did not know what it was.

It is possible that in the LTC home that participated in the research, those that did not like the BP Blogger did not respond to the survey. The finding that there was less awareness at the point of care may reflect a dissemination failure at the one site that participated in the research.

Literacy levels of some point of care staff may affect reading communications from management. The BP Blogger is disseminated with the internal newsletter of the LTC home that participated in the research. It is possible that there is too much information to read within a limited time if the newsletter is bundled together with other information. There was only one LTC home site that participated in the research, and this finding cannot be generalized to all LTC homes, however results indicate that dissemination strategies for the BP Blogger could be improved. Many people do not receive the BP Blogger that could benefit from the best practice information in the newsletter, indicating a need to strategize regarding dissemination efforts to reach point of care staff.

The findings of lesser awareness closer to point of care staff are consistent with the findings of four major dissemination studies done by the U.S. federal government to evaluate the efficacy of disseminating Treatment Improvement Protocols (TIPs) to substance abuse treatment providers. Hubbard and Mulvey (2003) report in their evaluation of the awareness of TIPs that of their sample of respondents (n=3267), all directors were aware of the TIPS, but less than half of the other respondents were aware of TIPs.

In the BP Blogger study 14.5% of respondents reported knowing Ms. van der Horst. Uptake of innovations according to Rogers (2003) is enhanced with personal contact, and opinion leaders to champion the uptake and dissemination of innovations. With her changed employment, Ms. van der Horst changed the distribution list for dissemination of the BP Blogger, relying on key people to disseminate to others as opposed to disseminating directly to all DRCs in LTC homes in LHIN 4 herself. The

lessened personal contact with the author may have an effect on the dissemination and uptake of the newsletter in LHIN 4 going forward.

There is much turnover of staff in LTC, and it is difficult to maintain current distribution lists, which may affect dissemination. The BP Bloggers are not issued as frequently as when Ms. van der Horst was in the position of RNAO LTC Best Practice Coordinator, which seems to have affected awareness.

The frequency of issues may have an impact on awareness and recognition of the value of the newsletter and dissemination to point of care staff. Dormuth et al. (2004) in their study of the impact of drug therapy letters state that "The combined effect of an ongoing series of printed letters distributed from a credible and trusted source can have a clinically significant effect on prescribing to newly treated patients" (2004, p. 1057). Although Dormuth et al.'s study (2004) was done with physicians, a very different population of health care workers, it is possible that increasing frequency of dissemination of the BP Blogger would increase awareness, dissemination to point of care, and uptake of the information in the newsletter.

In this study, the most frequently reported category of numbers of people the BP Blogger was shared with was one to ten people, with responses ranging from sharing with no one, to sharing with over 100 people. Managers may disseminate to some staff, and count on others to print it out for unregulated staff with no access to email. It is possible that there was a response bias of managers who may have reported passing on the BP Blogger to more people because they thought they should. Managers who receive the BP Blogger, may not have time to read it to determine the value of passing it on. It is also possible that the managers do pass on the BP Blogger, but staff may not have the time to

read the newsletter because of the workload issues in attending to the needs of their complex elderly clients in LTC.

Managers also may not realize the significance of passing on the BP Blogger to meet the information needs of point of care staff, which have fewer modes of receiving best practice information than registered staff. This was illustrated in the feedback from one respondent: "this survey (is) making me realize that I could do more i.e. post hard copy etc." (DRC, LTC Setting).

Sharkey (2008), Royle et al. (2002), Aylward et al. (2003) and Berta et al. (2005) state that organizational structure affects knowledge transfer, and some LTC home chains have structures in place that support dissemination efforts. Size of facilities has an effect on dissemination related to how they establish roles and responsibilities. The fit of the innovation with the needs, culture of care, and staff and skill mix, are also important considerations.

It is possible that the size of the LTC home that acted as a research site for the study was related to awareness of the BP Blogger in the LTC home. There is no way of knowing whether this site's staff is more or less aware of the BP Blogger than other sites. Unlike some LTC homes, the site that participated in the research has an internal email system for communication with staff, with limited external email access. Some point of care staff who responded in the affirmative to having email access may in fact have been referring to the internal email system of the LTC home, with no access to external email communication.

Larger facilities often have structures that support communication. Berta et al. (2005) state that "Learning capacity is related to an organization's structural capabilities

that promote knowledge transfer across units and to how well an organization's structure supports replication processes" (p. 287). Larger homes have challenges inherent in dissemination of information; there may be difficulties with communicating to large numbers of diverse staff, with a large proportion of unregistered staff with less computer access, skill, literacy levels, as well as time constraints and shift work.

The BP Blogger does reach some point of care staff; however, enhancing efforts to disseminate to point of care staff, although a challenge in the LTC environment may be of benefit in addressing the information needs of more staff.

5.3 Perception of Attributes of the BP Blogger

Most respondents rated the value of the content of the BP Blogger, and the value of the BP Blogger as a source of best practice information in comparison to others, as good, or excellent. There was a finding that those that rate the BP Blogger more highly are statistically significantly more likely to share the BP Blogger with a higher number of people. This is consistent with Rogers' Theory (2003) in that the perception of attributes contributes to the dissemination effect.

Managers rated the BP Blogger more highly than direct care staff and tended to report dissemination to more categories of people, including dissemination to point of care staff. It is possible that managers may value evidence-based practice more highly than point of care staff or they may be "early adopters" of information (Rogers, 2003). As previously discussed, this may also be related to their belief that this is their responsibility or to their access to email. The preference for receiving electronic information is evident in the study, and may be linked to ratings of the value of the BP Blogger.

Content analysis of responses to the question *What would make you share the BP Blogger with others?* revealed differences in responses from the managers compared to those from direct care. Managers commented that they would consider the relevance of the topic in the decision as to whether or not to share the newsletter. Direct care staff most often commented about ease of access in response to whether they would share the BP Blogger with others. These align with Rogers' (2003) theory in which he states that individual and organizational characteristics affect dissemination and uptake of innovations. The feedback is consistent with the context of LTC with limited time, high acuity of residents, and fewer resources than acute care, where managers need to consider organizational priorities to use resources effectively.

The ratings of style and readability of the BP Blogger were most frequently good and excellent, with managers rating it most frequently as excellent (51.6%) in terms of readability compared to other sources. Most people thought the length was just right. It is likely that many direct care recipients receive the BP Blogger in black and white print (in contrast to managers who receive it electronically in colour), which may affect perceptions of the BP Blogger in terms of style, format, and readability.

In response to the question *Do you have any suggestions for the format of the BP Blogger? (Colour, font, electronic, print)* there were many positive comments, with feedback that the BP Blogger is readable and useful. The researchers asked for ways to improve the BP Blogger; people were enthusiastic about it, wanting to make it even better, or more accessible to their peers. There were some suggestions for modifying the format and requests for a French language version. Recommendations for different

formats reflect the need to do formative research when developing products to suit different target audiences (Lefebvre & Flora, 1988).

A significant finding was that older people rated the BP Blogger more highly than younger people rated the BP Blogger. It was a small number of respondents in the study that rated the BP Blogger as poor or fair; the perceptions of people in different age groups needs further study. The mean age of the respondents was 51.71 (SD=8.0). The R.N. and R.P.N. work force in general is aging according to Health Canada, Office on Nursing Policy (2006), "There are more nurses over the age of 50 than under age 35 in every province and territory except Newfoundland and Labrador" (Age of Nurses, Registered Nurses section, para. 2). Similarly, the report from Health Canada, Office on Nursing Policy (2006, Age of Nurses, Licensed Practical Nurses section, para. 1) states that across Canada, "each jurisdiction has a greater percentage of LPNs over the age of 50 than under age 35". It is important to determine preferred formats of information in different age groups so that information can be tailored to specific target audiences.

The lower rating of value of the BP Blogger by point of care staff may be related to lower literacy levels of unregulated staff as reported in the literature (Royle et al., 2002; Ho et al., 2004). However, the literacy levels of the sample are unknown. They may receive the BP Blogger in black and white, which may lessen its' appeal and readability. The direct care staffs' ratings may be lower if they do not appreciate the importance of research and best practice information, as reported in research with point of care staff by Bostrom et al. (2006). In addition, they may have difficulty interpreting information and relevance to practice or lack the authority to implement changes in practice as reported in research (Scott, Estabrooks, Allen, & Pollock, 2008), which may

affect their perceptions of the attributes. However, in the BP Blogger study some findings are different from those reported in the literature. The quantitative results show that direct care staff mostly rate the BP Blogger as good and excellent.

Another finding in the study was that those that rate the BP Blogger more highly as a source of information about best practices in the elderly compared to other sources are statistically significantly more likely to use it as an educational tool for staff. They use it to answer a question, help them to provide better care to residents, use as an education tool for students, and in policy development. This points to the importance of formative and evaluation research to determine how information is perceived by target audiences, and whether strategies for disseminating information in a format such as the BP Blogger are effective as they can have an effect on practice.

5.3.1 Preferences for Sources of Best Practice Information

There was a distinct preference for receiving best practice information in the form of electronic newsletters in all samples. The researcher found it surprising that one to one discussions were not reported more frequently as a preferred format for receiving information. Direct care providers tended to report a preference for one to one discussion more frequently than other respondents but there was not a statistically significant difference. One to one communication is reported in the literature as the method most often used by point of care staff to assist them in practice, supporting Rogers' theory (2003). Royle et al. (2002) reported that nursing aides didn't see it as their role to seek out information on best practices and used 'just in time resources' such as expert knowledge and reference materials to help them make clinical decisions about particular patients" (2002, p. 195-196). Similar results were reported by Janes et al. (2008) in their

qualitative study with twenty unregulated care providers. They described "a distinct characteristic of participants' decision making was their reliance on human sources of knowledge (i.e. team sharing)"(p. 20) . Thompson et al. (2005) found in their observational study that staff report getting information from many different sources, however they are most likely to ask colleagues for information.

In the BP Blogger study, managers showed a preference for receiving information in the format of electronic newsletters. This may be linked to a perceived relative advantage of the BP Blogger (that it takes less time to disseminate), consistent with Rogers' (2003) theory that the characteristics of relative advantage and low complexity are lined to quicker dissemination. This would be consistent with Thompson et al.'s (2005) report on interviews in which nurses reported a lack of time and limited skills to search for information, a lack of computer skills, as well as a lack of knowledge to interpret "statistical information and technical language in research reports". In that study, participants contributed the perspective that "information formats need to maximize limited opportunities for consumption, and identified the need for summaries of research information" (p. 437).

Respondents in the BP Blogger study who rated the newsletter more highly were statistically significantly more likely to prefer receiving best practice information from electronic sources and online education. This also may be reflective of a type of person who prefers technologically mediated communication. There was a trend for association regarding preferences for Best Practice information in electronic newsletters, and ratings of value of the BP Blogger but it did not reach significance.

5.4 Use of the BP Blogger in Practice

There were many uses of the BP Blogger reported in the study. Those that rate the BP Blogger more highly as a source of information about best practices in the elderly compared to other sources, are statistically significantly more likely to use it as an educational tool for staff; to improve clinical knowledge; to help them to provide better care to residents; to answer a question; as an educational tool for families; as an education tool for students; and in policy development. This is consistent with Rogers' theory (2003) that the perception of the attributes of innovations will enhance uptake.

In the qualitative data respondents reported that the BP Blogger helped staff provide excellent care. Some staff in the BP Blogger study reported using the information to help them provide better care, however others may need assistance in translating the knowledge into practice (Lomas, 1993; Lavis, 2003; Farmer et al., 2009). Although there are reports of use of the BP Blogger by direct care staff, results of the study indicate that utilization is lower in point of care staff than in management staff.

Managers tended to rate the newsletter more highly in value, and reported finding the newsletter more useful than point of care staff. The content analysis showed that direct care staff reported use of the BP Blogger to affect care delivery, which is consistent with their roles, while management staff are more likely to disseminate it, and make it available for others, consistent with their responsibilities to enhance awareness of best practices to affect care delivery.

In early writings about diffusion and dissemination, Lomas (1993, p. 228) points out that dissemination activities "are received by the relevant audience as important contributors to changed awareness, attitudes, and even knowledge, but are not sufficient

to enable changes in behaviour". In Lomas' report on the study of caesarean section practices with physicians, targeted dissemination of best practice guidelines resulted in changes in awareness, knowledge, and attitude changes, but no changes in practice. When the researchers focused on an implementation strategy with the use of local opinion leader, there was success in bringing about practice change. Ploeg et al. (2007) and Davies et al. (2008) report on the role of organizational support and champions in the implementation of nursing best practice guidelines. It is possible that there would be greater use of best practice information in the BP Blogger, or similar topic summaries, if champions were involved in a strategy to implement recommendations into practice, versus passive dissemination.

Some managers reported discussion of the BP Blogger in meetings, which would promote awareness, as well as provide an opportunity to have an interactive discussion regarding the utility of the information for clinical practice. This interactive practice has been reported to be an effective in KT strategy by others. Lavis et al. (2003) report in their review of transferring research knowledge, that "passive process are ineffective and that interactive engagement may be most effective, regardless of the audience" (p. 226).

As detailed by Farmer et al. (2009), printed educational materials may have an effect on process outcomes such as knowledge, attitudes, skills, and professional practice, but there is a lack of evidence that they improve patient outcomes (2009, p. 2). As stated by Stolee et al. (2009) "Simply disseminating information as a form of continuing education in LTC is unlikely to result in changes to clinical practice...Effective continuing education is facilitated by organization and management

support...” (p. 2). They point out that context and supporting knowledge transfer are important components of practice change.

In their literature review of strategies for continuing education in Long Term Care, Aylward et al. (2003) report that studies have shown effects of continuing education on knowledge but they have not had a sustained effect on practice. There were recommendations from the respondents in the BP Blogger study to have champions assist with education and discussion of the utility of the BP Blogger to facilitate knowledge transfer. The efficacy of this approach to change practice merits further research. There were many positive statements regarding the BP Blogger. Respondents appreciated the relevance of the evidenced based information, and that the information could be used to give better care. However further research would need to be done to evaluate actual use of recommendations to evaluate practice effects.

The positive attitude towards evidence based information has been demonstrated in other studies in elder care. Bostrom et al. (2006, p. 137) in their study of research use in the care of older people found that nurses and nurses’ aides have a positive attitude towards research, but actual research use is low. Barriers cited by the registered staff in their study were time limitations. Nursing assistants reported barriers to research use as “job description does not include research” (2005, p. 136), as well as workload, lack of staff resources, and lack of authority to change practice. Their findings highlight that “critical appraisal phase of EBP [evidence based practice] is hard to carry out for the majority of staff within older people care” and suggest publishing research findings in summary and user friendly formats. They state that although several factors such as education level and attitudes are relevant to research uptake “unit managers have a

pivotal role in creating a research-minded culture that enable EBP where research use is a regular respected and rewarded activity" (2006, p. 137).

Many respondents reported using the BP Blogger for education and in meetings. This type of approach may enhance uptake of the information, and use in practice. McWilliam et al. (2008) report on a participatory action knowledge translation framework (PAKT) where managers work together with staff, "Participants combine bottom- up pull in decision-making, organizational leader push toward evidence-based practice and social interaction to create knowledge that integrates research evidence with tacit understanding and experience, thereby refining evidence-based practice" (p. 223). This type of approach may be effective in a LTC home setting, and would be a useful format for discussion of topic summaries such as the BP Blogger. The dissemination of the BP Blogger may be an efficient way to meet the information needs of staff. If staff read the information, it may have an effect on knowledge and attitudes of staff, and possibly a small effect on practice (Farmer et al. 2009). However, leadership, managers, and champions such as clinical nurse specialists, or educators are most likely needed to assist caregivers to implement changes in practice (McWilliam et al., 2008; Ploeg et al., 2007; Davies et al., 2008; P Kitson et al., 2008; Stolee et al., 2009).

5.5 Rogers' Theory & Electronic Knowledge Dissemination

The study results are in alignment with Rogers' Theory of Diffusion of Innovations. Rogers' (2003) theorizes that innovations diffuse over time through channels, among members of a social system. He discusses the importance of interpersonal communication channels and networks for dissemination. In the BP Blogger study, electronic newsletters were reported as a preferred source of best practice

information. This reflects a change in preferences for communication with advances in communication technology. As acknowledged by Rogers, "In addition to mass media and interpersonal communication channels, interactive communication via the internet has become more important for the diffusion of innovations in recent decades" (2003, p. 18).

According to Rogers' theory (2003), social channels, and opinion leaders are an important component of the spread of innovations. The BP Blogger does reach point of care staff; however, there was a higher level of awareness amongst managerial staff. There were recommendations from the participants in the study to increase dissemination through the use of champions, and professional networks, consistent with Rogers' theoretical tenets (2003).

Rogers (2003) theorizes that characteristics of individuals, and organizations have an effect on dissemination. The context of LTC with time constraints, fewer professional staff, less computer, email, and printer access than acute care, all affects dissemination. These factors may vary greatly between LTC homes, depending on leaders and champions and funding.

Electronic newsletters are a cost effective strategy, with a broad reach, however there are some barriers to electronic dissemination in the context of LTC. Staff with no access to email or computers are at a disadvantage for receiving or accessing electronic information; Rogers' characterizes this lack of access as a "digital divide" (2003, p. 468).

According to Rogers' theory (2003), the perceived attributes of the innovation affect the diffusion. Diffusion is enhanced if the innovation has a relative advantage, is compatible with values, low in complexity, trialable, and use is observable in nature. The

thesis research supports these theoretical tenets. People that value the BP Blogger find a way to pass it on in various ways, with print dissemination predominating in LTC**.**

According to respondents, the BP Blogger is compatible with values of evidence based practice, concise, less complex than journal articles, and can be used in flexible formats. Preferences for electronic information may be linked to individual differences, and the individuals that value the BP Blogger may be early adoptors (Rogers, 2003) of technology and innovations. People perceive electronic newsletters as an efficient way of disseminating information. There were significant findings of people passing on the newsletter to greater numbers if they valued the BP Blogger more highly.

Rogers (2003) theorizes organizational structures, individual leader characteristics, internal structure, such as centralization, complexity, formalization, interconnectedness, organizational slack, and size all have an effect, on uptake, as well as openness to new ideas. LTC has hierarchical and formalized structures, many regulations, and fewer resources than acute care. There is a higher patient to staff ratio, and a higher proportion of unregulated staff, all of which affect the culture of care, as well as the capacity to absorb new ideas, and implement research into practice.

This study examined the dissemination pathway, awareness, perceptions, and some barriers to dissemination in LTC settings. There was some data gathered on use of the BP Blogger, with significant findings for those rating the BP Blogger more highly, reporting higher use of the information. However, examining the uptake and implementation of practice change, and outcomes were beyond the scope of this study.

5.6 Implications for Practice and Policy

There are several recommendations that emerged from analysis of the results according to the tenets of Rogers' Theory (2003).

5.6.1 Practice Recommendations: Dissemination

5.6.1.1 Dissemination of Best Practice Information Through Professional Organizations

Many respondents reported that their most frequent source of best practice information was professional organizations such as the RNAO. Electronic newsletters, or knowledge products such as the BP Blogger could be disseminated through RNAO networks, or interest groups, and housed on the RNAO web-site, the Gerontological Nursing Association of Ontario, Ontario Long Term Care Association and others professional organizations' web-sites.

5.6.1.2 Maintain distribution lists.

There is a high turnover of management positions in LTC. It is important to maintain current distribution lists to ensure key people such as managers and educators receive knowledge products so that they can forward on to others who will benefit from the evidence based information, to enhance practice

5.6.1.3 Web-site Access

Ease of access to the BP Blogger online was recommended by participants, as well as developing a directory of listings, and including reminders of past issues, with emails that provide a link to the product. Other recommendations for facilitating ease of dissemination included a sign up feature, requesting to be on the distribution list, or a section with a link that allows ease of forwarding to others.

5.6.1.4 Computer and Email Access

Participants in the study recommended increased computer and email access to enhance dissemination of the BP Blogger. This is a complex systems issue related to time management and funding in LTC.

5.6.2 Practice Recommendations: Reaching Point of care

5.6.2.1 Create a culture of inquiry

Managers and organizations need to create a culture that is receptive, open and supportive to implementation of research based evidence (Bostrom et al., 2006; Ploeg et al., 2007; Rogers, 2003; Rycroft-Malone et al., 2004; McWilliam et al., 2008).

5.6.2.2 Use of champions

Managers, educators, knowledge brokers, and professional bodies all have a role in fostering a culture of evidence-based practice, acting as champions, and enlisting others as champions to enhance dissemination of best practice information (Rogers, (2003). In LTC information can be disseminated through internal email, during meetings, orientation, mandatory in-services, workshops, as well as making printed educational materials available for reference in the workplace. Personal copies of knowledge products such as electronic newsletters may enhance uptake of the information.

5.6.2.3 Planned dissemination

There are opportunities to develop dissemination plans to enhance awareness and improve dissemination of information such as the BP Blogger, and for other best practice information. Each organization should examine which strategy is most effective to enhance information flow to point of care staff. There are challenges in the context of LTC, and challenges may be different in each organization depending on the size of the

organization, whether it is a chain, computer access for staff, the culture of care, leadership, and strategies for communication (Berta et al., 2005). Dissemination plans in LTC homes need to include strategies that are not only linked to email, but include workshops, in-services, meetings, and printed educational materials, in a format that is suitable for literacy levels, posted within the LTC home and available at central places for quick reference for the staff to suit time constraints in LTC. Education given to unregulated caregivers in the workplace is essential to convey best practices; unregulated staff are not linked to professional organizations, and have fewer opportunities to attend professional workshops.

5.6.2.4 Frequency & Consistency

Marketing principles, and the consistency and frequency of dissemination of information in a recognizable format may enhance dissemination and awareness of knowledge products such as the BP Blogger (Dormuth et al., 2004; Lefebvre & Flora, 1988). Participants in the study also recommended having reminders of past issues included in emails. Updating and reissuing past issues is also a possibility to keep information current.

5.6.2.5 Preferred mode of receiving best practice information

Respondents in the BP Blogger study reported a preference for receiving best practice information in the form of electronic newsletters from all sample modes. Information can be tailored to suit care provider's preferences, and the constraints of the work setting. There is more of a challenge to provide information in electronic modes in the LTC home sector because of limited access to computers and emails.

5.6.3 Practice Recommendations: Characteristics of the Innovation

5.6.3.1 Electronic Newsletters

Electronic newsletters were the preferred mode of receiving best practice information for all modes of the sample, with some significant differences by role and sample.. It is important for educators and people charged with disseminating information and KT to try to tailor information to target audiences and context (Graham et al., 2006).

5.6.3.2 Formative research

Suggestions for organizations to enhance the uptake of best practice information would be to use formative research, and marketing principles to tailor information to specific populations (Lefebvre & Flora, 1988; Graham et al., 2006)., and increase awareness of information, to enhance use of evidence based information in practice. As recommended by participants in the study, the development of a "senior friendly" version of the BP Blogger for residents and families, as well as a French language version, could enhance use in different populations. Providing the BP Blogger or other best practice topic summaries in different formats or languages could enhance usability in diverse settings with culturally, ethnically and linguistically diverse populations. It is important to consider tailoring information to different skills and literacy levels when developing written materials to disseminate to interdisciplinary staff of different educational backgrounds (Graham et al., 2006). Topic relevancy or, as one participant referred to them, hot topics, that fit organizational priorities are of consideration for dissemination.

5.6.3.3 Print version

An important consideration for disseminating information in LTC is that print is the format most often used. There are cost as well as access considerations associated with colour print. It may be helpful to develop products or newsletters that look good in black and white, as perceptions affect readability, dissemination, and uptake.

Those charged with disseminating information should consider the benefit of printing in colour, if the colour affects the appeal and readability of a knowledge product. It may be that the cost of printing in colour may be offset by enhanced knowledge of the readers.

5.6.4 Practice Recommendations: Uptake in practice

5.6.4.1 Planned implementation

Targeted to LTC home staff, the BP Blogger, or electronic publications can provide information regarding emerging best practices, and may be used to address knowledge and attitudes of staff. Management support is needed for optimal utilization of the information to effect practice change (Rogers, 2003; Ploeg et al., 2007; Davies et al., 2008; Kitson et al., 2008; Stolee et al., 2009). A format such as developed by McWilliam et al. (2008) in the PAKT study where there was discussion of information with interdisciplinary staff to address practice implications, may be useful to enhance awareness and uptake of information disseminated in formats such as the BP Blogger.

5.6.4.2 Education of Professional Leaders

Managers, educators, and leadership teams need to be aware of knowledge translation theory and can enlist champions to disseminate information, and to facilitate changes in practice. Point of care staff may not perceive it as their role, or perceive that they have authority to make changes in practice (Bostrom, 2006). As Greenhalgh et al.

(2004, p. 599) point out, the "adoption decision by an individual in an organization is rarely independent of other decisions".

5.6.5 Practice Recommendations: Systems issues

5.6.5.1 Funding in LTC

The LTC sector has challenges to address at the systemic level. Higher complements of professional staff are needed to improve implementation of best practices. Electronic and computer and printer access would reduce the "digital divide" (Rogers, 2003). The lack of electronic access is a systems issue in LTC, affecting dissemination of information as well as morale of LTC staff. As one respondent in LTC responded to the question about email access, "we are not good enough". This is a complex issue in terms of funding, roles, resources as well as training, and needs advocacy at the Ministry of Health and Long Term Care level.

5.6.5.2 Role of Educational Institutions

Regulated health professionals and managers were key links in the dissemination and KT process. University programs could be lobbied to include information about KT and the importance of leadership. Registered health professionals provide supervision to unregulated health care providers, and are instrumental in fostering a culture of care that embraces evidence based practice. Community development courses, leadership and management programs for professional health care providers should include course content regarding KT theory. KT theory such as described by Graham and colleagues in the Knowledge to Action Cycle (Graham et al., 2006), Rogers' (2003) seminal work on Diffusion of Innovations, the RNAO's Toolkit for implementation of clinical guidelines, (RNAO, 2002), or other theoretical models of KT that address different facets of the

process, could assist professional staff in their roles to foster learning cultures, as well as enhancing their skills in implementation, monitoring, evaluation and sustaining practice changes.

5.6.5.3 Fund Knowledge Broker positions

The RNAO LTC Best Practice Coordinators, Psychogeriatric Resource Consultants, knowledge brokers at the Alzheimer Knowledge Exchange, and information specialists at the Seniors Health Research Transfer Network, are examples of people in the position of knowledge brokers. These people are responsible for creating and disseminating information like the BP Blogger. Funding these positions is important.

The BP Blogger is well received. The above recommendations could assist in improving dissemination and awareness of the existing product, or provide recommendations for the development, dissemination and uptake of information targeted to health care providers.

5.7 Methodological Strengths and Weaknesses

This study addresses a gap in the literature in LTC regarding electronic dissemination of information. A study of other settings was beyond the scope of this study, although some of the respondents work in community and acute care settings as well as the LTC sector.

A strength of the study is that it was designed using Rogers' theory of Diffusion of Innovations (2003). This theory guided the literature review, establishment of research questions, methodological decisions, development of survey questions, and data analysis.

An attempt was made to enhance survey response with the use of Dillman et al.'s (2009) tailored design method using a unified mode of survey construction, multiple

contacts, and reminders, as well as multiple modes to gather data and reduce coverage error. The survey was planned to obtain information from as many people as possible that the BP Blogger reached.

An electronically disseminated survey was used to request participation from those who received the BP Blogger electronically, and a web-site pop up survey was developed to reach those who actively searched out the BP Blogger on line. The DRC telephone sample was designed to obtain input from managers, who may not respond to an electonically disseminated survey. One LTC home was invited to participate in a print version of the survey to obtain information from point of care staff who would do not have email access, and to reduce coverage error. The region of LHIN 4 was selected for the DRC sample and LTC home research site for convenience, and due to resources.

It is unknown what percentage of people actually open emails from Mary Lou van der Horst. There are electronic means of tracking used in marketing research but this method of tracking was not explored for this study. Dillman et al. (2009) recommend up to five contacts to enhance survey response. However, based on discussions with DRCs and people who work in this field, a decision was made to balance this recommendation against the irritation factor. A decision was made by the researchers to use only one pre-notice, one invitation, and one reminder for the electronic questionnaire, for a total of three contacts versus the five recommended. The snowball sampling technique was designed to follow the dissemination path of the BP Blogger. People were asked to forward the survey request to whom they normally passed on the BP Blogger. It is possible that people who filled out the survey would not pass it on to others for various

reasons, including time, and lack of email access for unregistered staff, or families and friends to whom they would normally pass on the BP Blogger.

Response to the electronic questionnaire may be linked to preferences for electronic communication, dissemination, email KT products, and preference for email questionnaires. These respondents may be early adoptors of technology. People who responded to the electronic survey may be more likely to like and use the BP Blogger. There may be other social factors that affect response, such as knowing Mary Lou van der Horst personally. There may be education factors, such as people who have had education in management, knowledge translation, or research, and peoples' perception of their role in disseminating information that may affect response. Other factors that may affect response rates could be the lack of time to look at email, or lack of appreciation of the BP Blogger as a knowledge product, and lack of appreciation and engagement in research in the LTC sector.

The Web-site pop-up survey request was designed to capture the opinions of people who were not passive recipients of the electronic newsletter, but actively seeking out best practice information. Their opinion may vary from others' in their knowledge of technology, research, and knowlege translation. A high response from the web-site pop-up request was not expected, as responses to online surveys is typically very low, in the region of two to five percent of people who come to a page (Stephen Kingston, personal communication, Sept 29, 2009). The responses from the web-site pop-up survey were merged with the responses of the electronic surveys for analysis.

The telephone survey was planned to reduce no-response error with DRCs who may ignore an email request, but be willing to respond to the survey by phone. DRCs

play a key role in disseminating information in the hierarchical structure of LTC, and therefore are an important source of evaluation of the BP Blogger. The sample of DRCs was a convenience sample as the researcher could easily obtain the names of the DRCs in the region of LHIN 4. Dillman et al.'s (2009) recommendations for pre-notices and multiple contacts was followed to obtain a good response rate of 55/86 possible LTC homes in LHIN 4. DRCs were also given the option to complete an electronic version of the survey if they preferred, as Dillman et al. (2009) suggest that preference of mode for response leads to faster response. There may be an overlap in responses from DRCs in the electronically distributed sample, and the DRC sample. The category of DRC was not tracked in the demographic data. The DRC sample may not be representative of all DRCs in LTC. Social factors may have played a role in the response rate of the DRCs in LHIN 4. A larger number of the DRCs in LHIN 4 know Mary Lou van der Horst personally, or of her, from her work in the region, and may be more apt to respond to the survey than DRCs in other regions of the province. Respondents may also know the researchers personally and, thus, have been more apt to respond to the survey request. These factors may have influenced the response rate, and lead to more favourable responses than in other regions.

An attempt was made to increase coverage by using print surveys for point of care staff in one LTC home in LHIN 4. Point of care staff such as unregistered staff would not have a chance to give feedback in an electronic survey through an email link, as many do not have external email access in LTC. The LTC home that participated was large, with a total staff of 622 at the time of the survey. The response rates from the LTC home were low, and may not be generalizable to the population of LTC in general. A consideration

was given to using several LTC home sites to obtain feedback from point of care staff. However, this was logistically unfeasible in terms of time and funds for the scope of this study.

A detailed analysis plan (Appendix S) was followed using a combination of quantitative and qualitative descriptive analysis techniques. There is limitation to the data gathered in the questionnaire's relatively superficial open-ended questions designed for qualitative content analysis, versus data that could have been gathered in interviews.

Several strategies were used to enhance methodological rigour of the qualitative analysis. A preliminary categorization matrix for qualitative data analysis was developed from Rogers' Theory of Diffusion of Innovations (Appendix T). Sub categories were also developed based on theory; data was reviewed and coded, a process of deductive content analysis. Categories were discussed with the thesis advisor for triangulation, and new codes were developed for uncoded data, an inductive process to capture emerging themes. Responses to open ended questions were manually coded for themes, and then imported into NVIVO 10 for coding and analysis. Notes were kept in a journal regarding the coding and analysis process, and to identify emerging themes. Citations of the qualitative data were chosen to illustrate the original data that was coded for content analysis. Links between the theory, results, and data were made by the researcher, and discussed with the advisor to enhance reliability.

5.8 Research Recommendations

There are several recommendations for research that emerged from the results of this study.

1. Formative research (Lefebvre & Flora, 1988) for development of resources is recommended to determine style, font, and complexity that are suitable for different target groups, including management staff, direct care providers, families, caregivers of different age categories, as well as seniors themselves. Culturally diverse populations could be targeted for their response to translated versions. Larger groups of respondents are required.
2. More research is needed regarding age and preferences for information formats.
3. Marketing research approaches would be helpful to determine how many recipients open an attachment in an email, or forward on the email.
4. Research regarding whether recipients prefer organizations to bundle information in emails, or disseminate information in individual emails would be helpful to determine the most effective way to pass on information so that it is read and easily disseminated.
5. Research is recommended to determine whether the frequency and consistency of dissemination of information affects awareness.
6. Research comparing the results between a planned dissemination and implementation project, versus diffusion in another organization would be helpful to compare systems, and determine what factors affect uptake of information. As Graham et al. (2006) state: “change is more likely to occur with more planned and focused interventions” (p. 21).
7. Research that compares awareness of electronically disseminated information such as the BP Blogger in several LTC home environments would assist in determining the facilitators and barriers to KT in various settings.

8. It would be interesting to study the use of electronic dissemination and use of information in diverse settings to study differences in different sizes of organizations, or in other settings such as acute care, chronic care, and community care.
9. Research into the nature and role of champions in diffusion and implementation studies would illuminate how the role might be enhanced, and may assist in future attempts at instituting practice change.
10. Research regarding participatory processes of care, in organizations that use a system such as PAKT (McWilliam et al., 2008) for discussing and implementing evidence would be helpful to determine the efficacy of this approach in LTC homes.
11. Research is recommended to determine factors that support a culture that is receptive to change and innovation (Greenhalgh et al., 2004).

5.9 Conclusions

This descriptive study was designed to examine issues related to KT in the LTC home environment. Rogers' Theory of Diffusion of Innovations (2003) was used for the design and analysis of the descriptive study of the BP Blogger, examining the dissemination, awareness, perceptions, and uptake of the electronic newsletter in LTC. Awareness of the BP Blogger at the level of point of care staff was relatively low. However, it was highly regarded by respondents who were aware of it. Print dissemination appeared to be the dominant mode of reaching point of care staff in LTC homes. Every organization may have different challenges in getting information to their point of care staff, and implementing changes in practice, however systemic factors in the

context of LTC affect dissemination of electronic information, and uptake of information. Rogers' theory of Diffusion of Innovations (2003) is helpful to plan for dissemination and implementation of research findings in organizations and systems.

Research may be used in "instrumental, conceptual, or symbolic ways" (Lavis, 2003, p. 228). Respondents report on the use of the BP Blogger in various ways, such as use in providing excellent care, increasing knowledge, and drafting policies. Electronically disseminated information such as the BP Blogger may be helpful in getting research evidence to point of care staff. Staff need to be aware of the information prior to implementation of changes, in an organization receptive to change. Recommendations to enhance the dissemination and uptake of information include ensuring the information is targeted to specific populations, enlisting champions for the dissemination in various formats, enhancing electronic access, web-site directories, social media presence, as well as dissemination through networks, and professional organizations.

In the context of LTC, although there has been a tremendous increase in email and internet access over the last decade, print dissemination appears to still predominate according to the BP Blogger study. Enhancing print dissemination, as well as considering printing in colour to maximize recognizability and readability, or alternately developing and disseminating a version that looks good in black and white, to overcome costs as well as lack of access to colour printing may be possibilities to enhance dissemination in LTC. Ensuring there is support and facilitation by champions and leaders will assist with dissemination and uptake of the innovation according to Rogers' (2003) theory.

The dissemination of topic summaries that can distill complex research information in a format that is not complex, and can be easily understood is one strategy

that can be helpful to meet information needs of point of care staff in a cost effective manner. There were a number of significant findings that emerged as a result of this study that suggest the importance of formative research to develop knowledge products, to enable clinicians to tailor strategies to the target audience to enhance uptake of information:

1. People who valued the BP Blogger more highly for content were statistically significantly more likely to share with more people.
2. People who valued the BP Blogger more highly as a source of information compared to others were statistically significantly more likely to use the information.
3. The higher the age, the higher the value for content.
4. There was a distinct preference for electronic newsletters in all samples with significant findings by sample and role.
5. Those in the DRC LTC sample were more likely to prefer electronic newsletters than the LTC home sample.
6. Those in the direct care role were less likely than non direct care to prefer electronic newsletters.
7. Those in direct care roles were more likely than not direct care to prefer workshops.

If the topics are relevant to clinical practice, they are more likely to be passed on. Preferences for receiving information are important to consider when designing strategies for the dissemination of best practice information for different groups of providers; this

information is of importance to educators, clinicians, leadership, and professional organizations, as well as funding bodies.

The lack of access to computers and email in LTC homes put staff at a disadvantage compared to other settings, characterized by Rogers (2003) as the "digital divide". Lack of email and computer access limits access to preferred methods of receiving best practice information, communication from networks, information available on the internet as well as online education and training through webinars and courses.

As recommended by Rogers (2003), using personal channels and champions to promote distribution enhances diffusion. Ensuring key contacts know the importance of distributing the information, use of networks, maintaining current distribution lists, enhancing ease of web searches, increasing electronic access on a systems level, are all factors for enhancing awareness and dissemination of best practice information. Leaders in professional organizations need to be knowledgeable regarding knowledge translation and diffusion theory so that they will be able to strategize regarding dissemination of best practice information as well as implementation of changes in practice. Graham et al. (2006) state that change agents should: "assess for potential barriers that may impede or limit uptake of the knowledge so that these barriers may be targeted and hopefully overcome or diminished by intervention strategies" (p. 20).

Professional organizations have an important role in dissemination of best practice information, and educational institutions have a role in teaching about leadership, creating a culture of inquiry, and the importance of evidence based practice. Leaders need to be knowledgeable regarding knowledge translation, to enable them to tailor information to target audiences, as well as monitor and evaluate practice changes to

improve care. It is important to advocate for funding support for the development of best practice guidelines projects, as well as dissemination and implementation of best practice guidelines to improve health care.

Electronic newsletters such as the BP Blogger are a cost effective way of disseminating information to large groups of health care providers. There may be ways of enhancing awareness and dissemination in organizations and on the web, to broaden the reach of the information, with strategies for the use of champions, dissemination, and implementation of evidence based practice. In the context of LTC, print dissemination is still recommended to reach point of care staff.

Information in knowledge products such as the BP Blogger may have an effect on knowledge and attitudes; however, there is little evidence to support an effect on practice (Farmer et al., 2009). Leadership and management support from those who have authority to change processes, and provide support to implement, monitor, and evaluate changes, as well as sustain changes in practice, are essential to affect changes in practice (Davies et al., 2008; Graham et al., 2006; Greenhalgh et al., 2004; Kitson et al., 2008; Lavis et al., 2003; Rogers, 2003)

There are systems issues in LTC that affect the dissemination of information. The context of LTC, with fewer funds for computer access and the higher proportion of unregulated staff, fewer educators, and clinical nurse specialists are all factors that affect culture of care, dissemination of information and clinical practice. Advocacy for funding increases for staffing, human resources, and electronic access in LTC homes may assist with KT strategies and improve outcomes for complex, vulnerable elderly clients.

Rogers' theory of Diffusion of Innovations was helpful to develop the evaluation plan, survey, and to complete the analysis of the quantitative and qualitative data for the BP Blogger study. The theory lays the foundation for knowledge translation and the concepts are integral to planning dissemination and implementation of innovations. The study had many significant findings, and recommendations that emerged for development of electronic products, as well as for successful dissemination of best practice information in the context of LTC.

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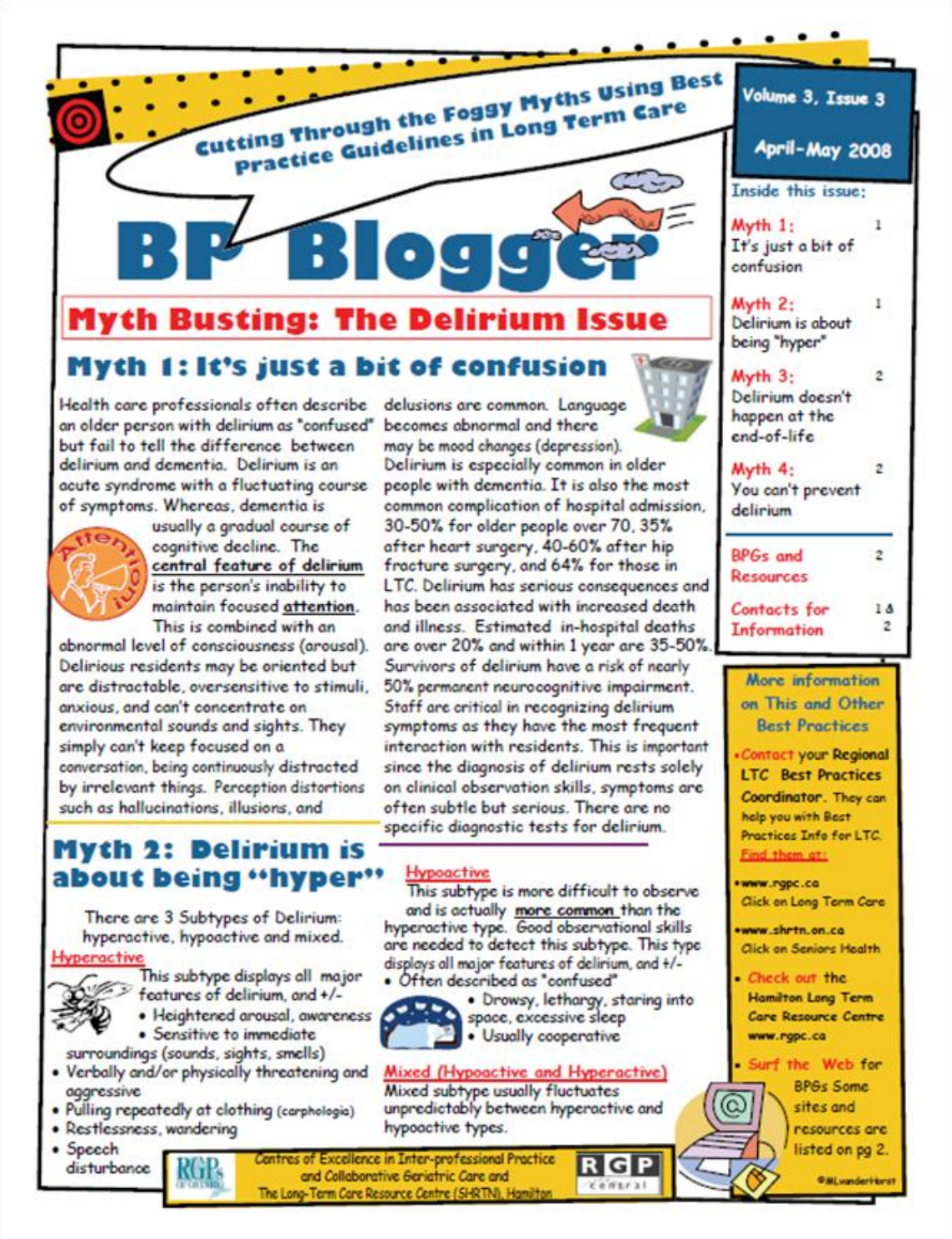
Appendix A

Best Practice Blogger



Cutting Through the Foggy Myths Using Best Practice Guidelines in Long Term Care

Volume 3, Issue 3

April-May 2008

BP Blogger

Myth Busting: The Delirium Issue

Inside this issue:

Myth 1: It's just a bit of confusion

Health care professionals often describe an older person with delirium as "confused" but fail to tell the difference between delirium and dementia. Delirium is an acute syndrome with a fluctuating course of symptoms. Whereas, dementia is usually a gradual course of cognitive decline. The **central feature of delirium** is the person's inability to maintain focused **attention**. This is combined with an abnormal level of consciousness (arousal). Delirious residents may be oriented but are distractable, oversensitive to stimuli, anxious, and can't concentrate on environmental sounds and sights. They simply can't keep focused on a conversation, being continuously distracted by irrelevant things. Perception distortions such as hallucinations, illusions, and delusions are common. Language becomes abnormal and there may be mood changes (depression). Delirium is especially common in older people with dementia. It is also the most common complication of hospital admission, 30-50% for older people over 70, 35% after heart surgery, 40-60% after hip fracture surgery, and 64% for those in LTC. Delirium has serious consequences and has been associated with increased death and illness. Estimated in-hospital deaths are over 20% and within 1 year are 35-50%. Survivors of delirium have a risk of nearly 50% permanent neurocognitive impairment. Staff are critical in recognizing delirium symptoms as they have the most frequent interaction with residents. This is important since the diagnosis of delirium rests solely on clinical observation skills, symptoms are often subtle but serious. There are no specific diagnostic tests for delirium.

Myth 2: Delirium is about being "hyper"

There are 3 Subtypes of Delirium: hyperactive, hypoactive and mixed.

Hyperactive

This subtype displays all major features of delirium, and +/-

- Heightened arousal, awareness
- Sensitive to immediate surroundings (sounds, sights, smells)
- Verbally and/or physically threatening and aggressive
- Pulling repeatedly at clothing (carphologia)
- Restlessness, wandering
- Speech disturbance

Hypoactive

This subtype is more difficult to observe and is actually **more common** than the hyperactive type. Good observational skills are needed to detect this subtype. This type displays all major features of delirium, and +/-

- Often described as "confused"
- Drowsy, lethargy, staring into space, excessive sleep
- Usually cooperative

Mixed (Hypoactive and Hyperactive)

Mixed subtype usually fluctuates unpredictably between hyperactive and hypoactive types.

Centres of Excellence in Inter-professional Practice and Collaborative Geriatric Care and The Long-Term Care Resource Centre (SHRTN), Hamilton

RGP central

More information on This and Other Best Practices

- Contact your Regional LTC Best Practices Coordinator. They can help you with Best Practices Info for LTC. Find them at:
- www.rgpc.ca Click on Long Term Care
- www.shrtn.on.ca Click on Seniors Health
- Check out the Hamilton Long Term Care Resource Centre www.rgpc.ca
- Surf the Web for BPGs Some sites and resources are listed on pg 2.

Note: This is an example of one of the 27 BP Bloggers that have been published

Appendix B

Web-based questionnaire[2], with email distribution

Awareness of the Best Practice (BP) Blogger

1. Before this survey, were you aware of the BP Blogger?*

   Yes

   No

2. Have you read/browsed any of the BP Bloggers?*

   Yes

   No

3. If you have answered "No" to questions 1 & 2, please proceed to Questions 25-36.[2]

---

4. How did you first learn of the BP Blogger? _____

5. Do you receive a copy of the BP Blogger?

   Yes

   No

6. Have you ever received the BP Blogger from any of these sources? (Please check all that apply):

   Professional meeting

   Workshop

   Course

   Mary Lou van der Horst

---

[2] Note: In the web-based questionnaire skip logic was applied. If participants answered "No", to question 1 & 2 (required fields*) the questionnaire skipped to question 25, with numbering adjusted automatically.

Newsletter

Network distribution list

Manager/Administrator

Educator

Colleague

7. In what format have you received the BP Blogger? (please check all that apply):

Electronic copy (e.g., email or web-site access)

Paper copy

8. With how many people do you typically share the BP Blogger? (For example, staff, students, networks):

None

1-10

11-20

21-30

31-100

>100

9. Who have you typically shared the BP Blogger with? (Please check as many as apply):

Nobody

Unregulated health care providers (for example P.S.W.s, or H.C.A.s)

Nurses (R.N./R.P.N.) or Allied Health Professionals

Management staff

Educators

Students

Residents or patients

Families

Volunteers

Networks

Professional organizations

Other (please specify) _____

10. How have you passed on the BP Blogger to others? (Please check all that apply)

Do not pass it on

E-mail

Meetings

Paper copies

Post at workplace

Link to web-site

Newsletter

Network distribution list

Other_____

11. Is there anything that stops you from passing on the BP Blogger? (Please check all that apply):

Time

Some staff do not have E-mail

Format is not compatible with computer system

No access to colour printer

Not applicable to clinical priorities

Unable to find on the Internet

Inadequate system for passing on information

Nothing stops me from passing on the BP Blogger

Other (please specify) _____

12. Have you tried to access the BP Blogger on the Internet?

Yes

No

13. Do you have any suggestions to increase the spread of the BP Blogger to clinical staff?

Comment_____

Impressions of the BP Blogger

14. What factors affect whether you read the BP Blogger? (Please check all that apply):

    The BP Blogger comes from a respected source
    Know Mary Lou van der Horst personally
    Source of best practice information
    It will help me provide better care for my residents/clients
    Topic
    Time
    Whether my computer is able to download the BP Blogger
    Other (please
    specify)_____

15. What would make you share the BP Blogger with others?

    Comment_____

16. Which word is most descriptive of the value you would give to the content of the BP Blogger:

    Poor
    Fair
    Good
    Excellent

17. Thinking about the BP Blogger, how would you rate it as a source of information about best practices in the care of the elderly compared to other sources?

    Poor
    Fair
    Good
    Excellent

18. Which word is most descriptive of the style (colour, print, font) of the BP Blogger:

Poor

Fair

Good

Excellent

19. Which word is most descriptive of how readable the BP Blogger is compared to other sources of best practice information:

Poor

Fair

Good

Excellent

20. How would you describe the length of the BP Blogger?

Too short

Just right

Too Long

21. Do you have any suggestions for the format of the BP Blogger? (colour, font, electronic, print):

Comment_____

Usefulness of the BP Blogger

22. How would you describe the usefulness of the BP Blogger for your practice?

Poor

Fair

Good

Excellent

23. Which of the following items apply to how you use information in the BP Blogger? (Please check all that apply):

Improve my general clinical knowledge

Answer a question I have

Helps me provide better care for my residents/clients

Education tool for staff

Education tool for families

Education tool for students

Policy development

I do not use it

Other_____

24. Do you have any suggestions to improve the usability of the BP Blogger?

Comment_____

25. Do you have any examples of how you or others use the BP Blogger?

Comment _____

Demographic Data

26. What is your professional designation/training?

H.C.A.

P.S.W.

R.P.N.

R.N.

N.P.

C.N.S.

S.W.

P.T.

O.T.

Physician

Dietician

Administration

Educator

Student

Volunteer

Other_____

27. What is your current work setting?

Long Term Care Home

Acute Care Hospital

Community

Complex Continuing Care

Rehabilitation

University

Community College

Not applicable

Other_____

28. What is your current role? (Please check all that apply):

Direct care

Management

Consultation

Education

Student

Volunteer

Other (please

comment_____

29. What is your year of birth? Year: _____

30. Do you have e-mail access at work?

Yes

No

31. Do you have access to the internet in your workplace?

    Yes
    No
    Unsure

32. What is your most frequent source of information about best practices for the elderly?

    _____

33. In what format would you like to receive information about best practices? (Please check up to 3):

    One to one discussions
    Meetings
    Workshops
    Printed educational materials in the workplace
    Journals
    Electronic newsletters
    Webinars
    On-line education modules
    Other (please specify)_____

34. In what province or state do you work? _____[3]

35. In what country do you work? _____[4]

36. Who asked you to participate in this study?[5]

---

[3] Note: This question was included in the web- based questionnaire for the email distribution and web-site request, but not included in the electronic option for Directors of Long Term Care.

[4] Note: This question was included in the web- based questionnaire for the email distribution and web-site request, but not included in the electronic option for Directors of Care in Long Term Care.

Mary Lou van der Horst (author of the BP Blogger)

Someone else

That is the end of the BP Blogger Questionnaire. Thank you for your participation!

Would you like to participate in a draw for a $50.00 Gift Certificate from Chapters?
To be eligible for the draw[6], please complete the survey, and then provide contact information below.
This information will not be used for any other purpose than the draw. The contact information will be separated from the responses on the survey and entered into the draw to take place on (insert date).

Do not wish to participate

Wish to participate

Contact information _____

BP Blogger Questionnaire: Request to Forward[7]

Thank you for your participation!

Please pass on the survey to anyone you usually forward on the BP Blogger!

Done ----------

---

[5] Note: This question was included in the web-based questionnaire for the email distribution but not included in the web-site pop-up request or in the electronic option for Directors of Care in Long Term.

[6] Please Note that each of the participant groups including the web-site pop up, electronically disseminated questionnaire, and electronic/telephone version of the questionnaire for the Directors of Resident Care for Long Term Care homes in LHIN 4 respectively, the participants were offered an opportunity to enter a draw for a $50.00 gift certificate for Chapters.

[7] Participants from the web-site pop-up request and optional electronic version for the Directors of Care in Long Term Care were not asked to forward on the survey request.

Appendix C

Paper Questionnaire[9]

Awareness of the Best Practice (BP) Blogger

1. Before this survey, were you aware of the BP Blogger?

   Yes

   No

2. Have you read/browsed any of the BP Bloggers?

   Yes

   No

If the answer is "No" to both of the above questions, please proceed to questions 25-32.

3. How did you first learn of the BP Blogger? _____

4. Do you receive a copy of the BP Blogger?

   Yes

   No

5. Have you ever received the BP Blogger from any of these sources: (Please check all that apply):

   Professional meeting

   Workshop

   Course

   Mary Lou van der Horst

   Newsletter

   Network distribution list

   Manager/Administrator

   Educator

   Colleague

   Other (please specify)_____

In what format have you received the BP Blogger? (please check all that apply)

Electronic copy (e.g., e-mail or web-site access)

Paper copy

6. With how many people do you typically share the BP Blogger? (For example, staff, students, networks).

   None
   1-10
   11-20
   21-30
   31-100
   >100

7. Who have you typically shared the BP Blogger with? (Please check as many as apply):

   Nobody
   Unregulated health care providers (for example P.S.W.s, or H.C.A.s)
   Nurses (R.N./R.P.N.) or Allied Health Professionals
   Management staff
   Educators
   Students
   Residents or patients
   Families
   Volunteers
   Networks/ Professional organizations
   Other (please specify) _____

8. How have you passed on the BP Blogger to others? (Please check all that apply)

   Do not pass it on
   E-mail
   Meetings

Paper copies

Post at workplace

Link to web-site

Newsletter

Network distribution list

Other (please specify)_____

9. Is there anything that stops you from passing on the BP Blogger? (Please check all that apply)

Time

Some staff do not have E-mail

Format is not compatible with computer system

No access to colour printer

Not applicable to clinical priorities

Unable to find on the Internet

Inadequate system for passing on information

Nothing stops me from passing on the BP Blogger

Other (please specify) _____

10. Have you tried to access the BP Blogger on the Internet?

Yes

No

11. Do you have any suggestions to increase the spread of the BP Blogger to clinical staff?

Comment_____

Impressions of the BP Blogger

12. What factors affect whether you read the BP Blogger? (Please check all that apply)

    The BP Blogger comes from a respected source
    Know Mary Lou van der Horst personally
    Source of best practice information
    It will help me provide better care for my residents/clients
    Topic
    Time
    Whether my computer is able to download the BP Blogger
    Other (please specify)_____

13. What would make you share the BP Blogger with others?

    Comment_____

14. Which word is most descriptive of the value you would give to the content of the BP Blogger:

    Poor
    Fair
    Good
    Excellent

15. Thinking about the BP Blogger, how would you rate it as a source of information about best practices in the care of the elderly, compared to other sources?

    Poor
    Fair
    Good
    Excellent

16. Which word is most descriptive of the style (colour, print, font) of the BP Blogger:

    Poor
    Fair
    Good
    Excellent

17. Which word is most descriptive of how readable the BP Blogger is compared to other sources of best practice information:

    Poor
    Fair
    Good
    Excellent

18. How would you describe the length of the BP Blogger?

    Too short
    Just right
    Too long

19. Do you have any suggestions for the format of the BP Blogger?(colour, font, electronic, print):

    Comment_____

    Usefulness of the BP Blogger

20. How would you describe the usefulness of the BP Blogger for your practice?

    Poor
    Fair
    Good
    Excellent

21. Which of the following items apply to how you use information in the BP Blogger? (Please check all that apply):

    Improve my general clinical knowledge
    Answer a question I have
    Helps me provide better care for my residents/clients
    Education tool for staff

Education tool for families

Education tool for students

Policy development

I do not use it

Other_____

22. Do you have any suggestions to improve the usability of the BP Blogger?

Comment_____

23. Do you have any examples of how you or others use the BP Blogger?

Comment _____

Demographic Data

24. What is your professional designation/training?

H.C.A.

P.S.W.

R.P.N.

R.N.

N.P.

C.N.S.

S.W.

P.T.

O.T.

Physician

Dietician

Administration

Educator

Student

Volunteer

Other_____

25. What is your current work setting?

    Long Term Care Home
    Acute Care Hospital
    Community
    Complex Continuing Care
    Rehabilitation
    University
    Community College
    Not applicable
    Other_____

26. What is your current role? (Please check all that apply):

    Direct care
    Management
    Consultation
    Education
    Student
    Volunteer
    Other (please comment)_____

27. How long have you worked at (the Long Term Care Home)? [8]

    <1 year

    1-5 years

    5-10 years

    >10 years

[8] Please note that this question was only asked in the paper version for the LTC home, and was not included in the web-site pop-up, electronically disseminated questionnaire, or questionnaire for the Directors of Resident Care.

What is your year of birth? Year: _____

28. Do you have e-mail access at work?

    Yes

    No

29. Do you have access to the internet in your workplace?

    Yes

    No

    Unsure

30. What is your most frequent source of information about best practices for the elderly?

31. In what format would you like to receive information about best practices? (Please check up to 3):

    One to one discussions
    Meetings
    Workshops
    Printed educational materials in the workplace
    Journals
    Electronic newsletters
    Webinars
    On-line education modules
    Other (please specify)_____

That is the end of the BP Blogger Questionnaire. Thank you for your participation!

Enter the Draw for A Day Off with Pay![9]

[9] Note: The draw for a day off with pay was only for the LTC home staff.

To be eligible for a day off with pay, please complete the survey and provide contact information below. This information will not be used for any other purpose than the draw. The contact information will be separated from the responses on the survey and entered into the draw to take place on June 21st, 2012.

Do not wish to participate

Wish to participate

Contact information:

Please place the Questionnaire in the stamped addressed envelope to return to:

Ann Tassonyi, Graduate Student, Applied Health Sciences

C/O Dept. of Nursing

Brock University

500 Glenridge Ave.,

St. Catharines, ON

L2S 3A1

at75fd@brocku.ca

Telephone Version for Directors of Resident Care

Please Note that in the telephone version of the questionnaire for the Directors of Resident Care for Long Term Care homes in LHIN 4, the participants had an opportunity to enter a draw for a $50.00 gift certificate for Chapters as detailed below:

Enter the Draw for A $50.00 Chapters Gift Certificate!

Upon completion of the survey you are eligible to enter a draw for a $50.00 Gift Certificate to Chapters. This information will not be used for any other purpose than the draw. The contact information will be separated from the responses on the survey and entered into the draw to take place on June 1st, 2012.

Do not wish to participate

Wish to participate

Contact information:

Thank you! If you have any questions about the survey, please contact:

Ann Tassonyi RN, BScN
Graduate Student, Applied Health Sciences
C/O Dept. of Nursing
Brock University
500 Glenridge Ave.,
St. Catharines, ON
L2S 3A1
at75fd@brocku.ca

Appendix D

Links between Questionnaire items, Rogers' Theory and Research Questions

Research Questions	**Theoretical Tenets of Rogers' (2003) Diffusion of Innovations**	**Questionnaire Items**
1. What is the dissemination pathway of the BP Blogger?	Innovations are Communicated through channels Over time Through members of a social system Innovations diffuse from an external source, and then flow through interpersonal contact networks Diffusion is through social channels, networks, champions, change agents Individual factors as well as the structure of the social system can facilitate the diffusion of innovation. People pass through stages on the way to adoption: Knowledge* Persuasion* Decision Implementation Adoption	Awareness of the BP Blogger [Question (Q)s 1,2,3,4] How they become aware of it (Q 5) Method brought to their attention.(Q 6) Sharing and passing on BP Blogger (Q 7, 8, 9) Factors affecting spread of innovations [Q 10, 11, 12, 13, 29, 30, 31, 32 & demographic data (Q 25,26,27,28)],
2. Does the BP Blogger reach the point of care staff?	As above	Q 1, 2, 3, 4, 5, 8, 27
3. How is the BP Blogger perceived by the people who receive it?	Innovations are diffused through members of a social system. Perception of the innovation influences adoption & diffusion Relative advantage (the BP Blogger is more useful than other sources of evidence) Compatible with values (BP Blogger fits with my value about evidence based practice) Low complexity Trialability Observability	Factors affecting whether participants read and share the BP Blogger (Q 13, 14) Perceptions of credibility, value, style, readability, length, usefulness (Q 15, 16, 17, 18, 19, 21, 23) Suggestions for improvement (Q 20)

4. How is the BP Blogger used in practice?	People pass through stages on the way to adoption: Knowledge Persuasion Decision* Implementation* Adoption* (knowledge of an innovation is not the same as use) Characteristics of the innovation affect uptake Relative advantage Compatible with values Low complexity Trialability Observability Individual factors (attitudes towards change), influence of opinion leaders, change agents and champions, networks, and the social system, affect adoption decisions. Organizational characteristics affect adoption: centralization complexity formalization interconnectedness organizational slack size	Reported use, suggestions for improved usability, and examples of use (Q 22, 23, 24) as well as questions about work setting and job position.

Appendix E
Agreement to Participant email Long Term Care Home Management

From: (Director of Performance and Quality Systems)
Sent: January 9, 2012 3:08 PM
To: Ann Tassonyi
Subject: FW: BP Blogger Survey
Hello Ann,

LTC home CQI/Risk Management/Professional Advisory Committee has approved your BP Blogger survey proposal as outlined below.

We wish you the best of luck with the survey, and look forward to seeing the results.

(LTC home, Director of Performance and Quality Systems)

Appendix F

Pre-notice email topeople on Mary Lou van der Horst's BP Blogger email distribution list

From: Mary Lou van der Horst
Subject: BP Blogger Survey
Invitation

In a few days you will receive an e-mail invitation to participate in a research study about the Best Practice (BP) Blogger. The researchers would greatly appreciate your help in learning about distribution, awareness, perceptions, and use of the BP Blogger.

This request is sent on behalf of Ann Tassonyi, graduate student and her thesis supervisor, Dr. Lynn McCleary, Associate Professor, Brock University Department of Nursing. This study is being done as part of Ann Tassonyi's thesis research for a Master of Arts in Applied Health Sciences (Brock Ethics Review Board File: 11-192-McCleary). Draw!

We hope that you would take 5-10 minutes to fill out the online questionnaire, enter a draw for a $50.00 Chapters gift certificate, and then pass on the survey to anyone you usually pass on the BP Blogger.

If you have any questions regarding this research, please contact:

Ann Tassonyi RN, BScN
Graduate Student, Faculty of Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca

Appendix G

Letter of invitation email to people on Mary-Lou van der Horst's dissemination list

Subject line: BP Blogger Survey: Response Requested

You are invited to participate in a short online survey about the distribution, awareness, perceptions, and use of the BP Blogger. This request is sent on behalf of Ann Tassonyi, graduate student and her thesis supervisor, Dr. Lynn McCleary, Associate Professor, Brock University Department of Nursing.

Please click on the electronic link [SurveyLink] or copy and paste the URL into your web browser to learn more about and participate in the survey. To follow the pathway of the BP Blogger, and determine readers' opinions of the newsletter, we ask that once you complete the survey, please pass on the survey request to anyone you usually pass on the BP Blogger!

Draw for a $50.00 Chapters Gift Certificate!

Participants who complete the survey are eligible to enter a draw for a $50.00 to take place on June 25th, 2012.

This study is being done as part of Ann Tassonyi's thesis research for a Master of Arts in Applied Health Sciences. The study has received Ethics clearance through Brock University's Research Ethics Board REB File # 11-192-McCleary. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Please print this information for your records. Many thanks in advance for your help in finding out about the electronic distribution of information about best practices in the care of older adults!

If you have any questions regarding this survey, or would like feedback regarding the results of the survey please contact:

Ann Tassonyi RN, BScN

Graduate Student, Faculty of Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca

Appendix H

Letter of invitation/information provided on first page of web based questionnaire

Dear Participant,

We would greatly appreciate your help in finding out:

1. The pathway of dissemination of the BP Blogger
2. Clinicians' awareness of the electronic newsletter
3. Perceptions of the newsletter
4. Use of the BP Blogger in practice

We would like to learn more about electronic distribution of information, and whether the BP Blogger meets the information needs of people caring for older adults.

The survey takes only 5-10 minutes to complete. We do not anticipate any risks to participation. The only direct benefit is that participants will be reminded of the BP Blogger as a source of best practice information, and results will assist in supporting staff working with older adults.

This study is being done as part of Ann Tassonyi's thesis research for a Master of Arts in Applied Health Sciences with thesis advisor Dr. Lynn McCleary, Associate Professor, Brock University. Ethics clearance has been obtained through the Research Ethics Board at Brock University, file # 11-192-McCleary. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Your participation is voluntary. Results are confidential and cannot be linked to individual participants. Completion of this survey indicates your consent. Survey Monkey is an US company and therefore subject to homeland security scrutiny, in particular, the Patriot Act, which is a potential limit to confidentiality.

The survey data will be securely stored for 5 years and then destroyed. Results will be reported at conferences and scientific publications.

Draw for $50.00 Gift Certificate!
Enter a draw for a $50.00 Chapters gift certificate upon completion of the questionnaire. Contact information will be separated from results of the survey and will not be used for any other purpose than the draw.

Please print a copy of this information for your own records. Many thanks in advance for your help in examining the pathway, awareness, perceptions and use of the BP Blogger!
If you have any questions regarding this survey, or would like to receive feedback regarding the results, please contact:

Ann Tassonyi RN, BScN
Graduate Student, Faculty of Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca

Appendix I

Reminder email letter of invitation to people on Mary-Lou van der Horst's BP Blogger email distribution list

From: Mary Lou van der Horst's e-mail
Subject: BP Blogger: Please help us with your opinion

Last week you received a request from Ann Tassonyi and Dr. Lynn McCleary, Brock University Department of Nursing, to participate in an electronic survey regarding the BP Blogger. If you have already completed the survey, please accept our sincere thanks. If not, please consider doing so today. We are especially grateful for your assistance because it is only by asking people like you to share your experience that we can understand the distribution, clinicians' awareness, perceptions, and use of the BP Blogger.

Please click on the electronic link to participate in the survey [insert link] or copy and paste the URL into your web browser.

This email is sent on behalf of: Ann Tassonyi, graduate student and her thesis supervisor, Dr. Lynn McCleary, Associate Professor, Brock University Department of Nursing.
This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University File # 11-192-McCleary.

If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca. Draw for $50.00!

Upon completion of this survey, there is an option for participants to enter a draw for a $50.00 Chapters gift certificate.

Thank you in advance for your assistance in this survey to determine the pathway and use of the BP Blogger!
Please print a copy of this information for your records. If you have any questions regarding this survey, or would like feedback regarding the results of the survey please contact:

Ann Tassonyi RN, BScN
Graduate Student, Faculty of Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca

Appendix J

Pop-up request on Regional Geriatric Program central Web-site

The following message will pop up whenever someone opens a BP Blogger on the Regional Geriatric Program central web-site during the one-month monitoring period.

The BP Blogger is being evaluated. Please click here [insert link] to participate in a short, online survey. Participants are eligible to enter a draw for a $50.00 Chapters gift certificate!

Appendix K

Letter of information mailed to Directors of Resident Care in Long Term Care (on Brock University Department of Nursing Letterhead)

Date
Mailing Address of Director of Care
Dear (insert name here)
Regarding: Evaluation of the Best Practice (BP) Blogger

A few days from now, you will receive a telephone call to request your participation in a 10-15 minute telephone survey for a research project being conducted by Ann Tassonyi and Dr. Lynn McCleary. The study is being conducted to examine the pathway of dissemination and use of the Best Practice (BP) Blogger. We are interested in understanding distribution, awareness, perceptions, and use of the BP Blogger in Long Term Care settings. The research is being conducted by Ann Tassonyi to meet the requirements of her Masters of Arts in Applied Health Sciences at Brock University.

The results of the survey will contribute to understanding of knowledge translation in long term care, and electronic dissemination in general.

This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University File # 11-192-McCleary If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Thank you for your time and consideration. It is only with the generous help of people like you that the research can be successful.

Sincerely,

Ann Tassonyi RN, BScN
Graduate Student, Faculty of Applied Health Sciences
at75fd@brocku.ca

Lynn McCleary RN PhD
Thesis Supervisor
Associate Professor, Department of Nursing
Phone: 905-688-5550 ext. 5160, Fax 905-688-6658
lmccleary@brocku.ca

P.S. Draw for a $50.00 Chapters Gift Certificate!

We will be offering the opportunity to participate in a draw for a $50.00 Chapters gift certificate, open to all Directors of Resident Care in the LHIN 4 who participate in the telephone survey.

Appendix L

Telephone script for obtaining informed consent from Director of Resident Care in Long Term Homes

1. Have a blank questionnaire ready
2. Contact by phone, from the research assistant office at the Department of Nursing
3. If participant answers the phone:

Hello, my name is ... I am a research assistant working with Ann Tassonyi and Lynn McCleary at Brock University. I am calling to invite you to participate in a short survey about the BP Blogger. Do you have a moment for me to tell you what would be involved?
If the participant indicates that, they do not have time right now:
Ask if there is a better time when they could be contacted. Thank them. Note the time and call them back at their preferred time or note their declining to participate.
If the participant indicates that, they have time:

We want to find out about the pathway of distribution of the BP Blogger, readers' perceptions and use of it; as well as whether it meets the needs of people who care for older adults. We also want to learn more about electronic distribution of information about care of older adults.

This research is being completed as a requirement for Ann Tassonyi's Masters degree in the Faculty of Applied Health Sciences at Brock University. It has received ethics clearance through the Research Ethics Board at Brock University. If you have any questions about the ethics of this study, you can contact the Brock Research Ethics Board. I can give you their contact information (Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca).

Your participation would be voluntary. All survey responses are confidential. There are no known risks to participating in the survey. The only direct benefit would be to remind participants of the BP Blogger as a source of best practice information. The

results may assist in supporting staff working with older adults in Long Term Care. Results will be reported at conferences and submitted for journal publication.

Questionnaires are identified with a research code number and do not have any identifying information on them. Questionnaires are stored in a locked filing cabinet and then entered into a secure electronic database. Paper copies will be destroyed in 6 months. Electronic copies will be stored for five years. You can withdraw from this study at any time before Ann Tassonyi's thesis defence about 6 months from now. If you choose to withdraw, your questionnaire would be destroyed and your responses erased from the electronic file.

People who complete the survey are eligible to enter a draw limited to the LHIN 4 DRCs. The draw is for a $50 gift certificate at Chapters.

You may have received an email invitation to participate in the survey electronically. I am calling you to invite you to participate in a 10-15 minute telephone survey that is identical to the electronic version. Do you have any questions about the survey? (*See list of possible questions and answers*). Would you have time to complete the survey now, or would you like to make an appointment for another telephone call to complete the survey?
If the participant wants to participate now, complete questionnaire. When the questionnaire is finished:

thank the participant and inform them that their name is being entered in the draw
double check that the ID number is on all pages of the questionnaire
mark that the survey is completed on the tracking form
put the survey in the file in the locked filing cabinet
send an email to Ann Tassonyi informing her that there is another questionnaire ready for data entry.

If the participant wants to make an appointment, make an appointment for another phone call at their convenience. Confirm the time, inform the participant whether you or another research assistant will be calling back, and thank them.

If the participant indicates that they would prefer to complete the electronic version of the survey, send them the preset email invitation and link to the electronic survey. Thank them. Send a reminder email in 10 days. Mark on the tracking sheet that the email and the reminder were sent.

If the participant indicates that they already completed the electronic survey, thank them. Indicate electronic completion on the tracking form.

4. If the participant does not answer the phone:

Leave a message: Hello, this is (insert your name), a research assistant working with Ann Tassonyi and Lynn McCleary at Brock University. We are evaluating the BP Blogger. I will try to contact you again to arrange for a telephone survey.

Document date and time on tracking form.

Repeat attempts to contact to 10 times, on different days and times (morning and afternoon). Leave a message once, not on repeated attempts.

5. If the participant has a question about the research:

Refer to following potential questions. If you do not know the answer, offer to get them the answer and call back. Contact Ann Tassonyi by phone and email to get an answer. Call the participant back to provide the answer.

Examples of possible questions:

Who has access to the information I provide? The only people who have access to the questionnaires are the research assistants on this study, Ann Tassonyi, and her thesis supervisor, Dr. Lynn McCleary. Ann Tassonyi and Dr. McCleary will have access to the completed questionnaires but they will not know who completed them.

Who will know whether I participated in the survey? Only the research assistants on this study. When we finish the study, the research assistants will destroy the list of names and ID numbers we are using to keep track of phone calls we make. This means that Ann Tassonyi and Lynn McCleary will not know who participated. The only exception is that Ann Tassonyi will know who wins the draw for the Chapters gift certificate.

How will the results of the survey be used? The results will be reported in Ann Tassonyi's M.A. thesis. Results will be presented at conferences and summarized in an article that will be submitted to a journal for publication.

Can I have a copy of the findings of the survey? Yes, you can. I can add your name to a list so that Ann Tassonyi can send you a short summary of the findings and a notice when the findings are published.

Appendix M

Optional email link to questionnaire for Direction of Resident Care, Long Term Care who request an electronic rather than telephone questionnaire

Note: This email would be sent to Directors of Resident Care (DRCs) who request an electronic version of the questionnaire instead of the telephone version. It would be sent from the research assistant's Brock University email. The email invitation and follow-up reminders mimic the invitations sent to the BP Blogger distribution list.

Subject: Follow-up to Phone Call about Research Evaluation of the BP Blogger
Dear [insert DRC name],
I am sending this email because you indicated that you would prefer to participate in this study electronically. The email is sent on behalf of Ann Tassonyi, graduate student, Brock University Faculty of Applied Health Sciences and her thesis supervisor, Dr. Lynn McCleary.

You are invited to participate in a research study to examine the dissemination of the BP Blogger. We would greatly appreciate your assistance in finding out the distribution of the BP Blogger, clinicians' awareness, perceptions, and use of the BP Blogger. We would like to determine whether it meets the needs of people who care for older adults. We also want to learn more about electronic distribution of information about care of older adults.

This study has been developed to meet the requirements of Ann Tassonyi's Master of Arts thesis. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University File # 11-192-McCleary. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca. Please print a copy of this information for your records.
Please click on the electronic link to participate in the survey [insert link] or copy and paste the URL into your web browser (Survey link with a unique URL for DRCs).

There are no anticipated negative consequences to participating in this survey, participation is voluntary, and the results are confidential. Results cannot be linked to individual participants. Results will be reported at conferences and in scientific publications.

Draw for $50.00!
At the end of this survey, there is an option for participants to participate in a draw for a $50.00 Chapters gift certificate.
Thank you in advance for your assistance in this survey to determine the pathway and use of the BP Blogger.

If you have any questions regarding this survey please contact:
Ann Tassonyi RN, BScN
Graduate Student, Faculty of Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca

About 10 days later, the research assistant will send a reminder e-mail (Appendix N).

Appendix N

Optional reminder email for Direction of Resident Care of Long Term Care who request an electronic rather than telephone questionnaire

Subject: BP Blogger Evaluation: Please help us with your opinion
Last week I sent you an email in follow-up to our telephone conversation, inviting you to participate in an electronic survey for the evaluation of the BP Blogger, if you have already completed the survey, please accept our sincere thanks. If not, please consider doing so today. We are especially grateful for your assistance because it is only by asking people like you to share your experience that we can understand the pathway, clinicians' awareness, perceptions, and use of the BP Blogger.

There are no known or anticipated risks for people who take part in this research study. There are no direct benefits to people who take part in this study, but the results may be helpful for finding better ways to support staff that provide care in LTC homes. Participation is completely voluntary; results are confidential and cannot be linked to individual participants. The survey takes only 5-10 minutes to complete.

Please click on the electronic link to participate in the survey [insert link] or copy and paste the URL into your web browser.

This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University REB (File # 11-192 -McCleary). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca. Please print copies of information for your own records.
Draw for $50.00!

At the end of this survey, there is an option for participants to participate in a draw for a $50.00 Chapters gift certificate.

Many thanks in advance for your assistance in this survey regarding the pathway and use of the BP Blogger,
If you have any questions regarding this survey please contact:
Ann Tassonyi RN, BScN
Graduate Student, Faculty of Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca
This email is sent on behalf of:
Ann Tassonyi, graduate student and her thesis supervisor, Dr. Lynn McCleary, Associate Professor, Brock University Department of Nursing.

Appendix O

Flyer for Long Term Care Home nursing stations

To All Staff at (name of LTC home):

You are invited to participate in a 5-10 minute survey regarding the BP Blogger!

We would appreciate your help in finding out whether the BP Blogger meets the information needs of people who care for older adults.


Cutting Through the Foggy Myths Using Best Practice Guidelines in Long Term Care

Volume 3, Issue 3
April-May 2008

BP Blogger

Myth Busting: The Delirium Issue

Myth 1: It's just a bit of confusion

Health care professionals often describe an older person with delirium as "confused" but fail to tell the difference between delirium and dementia. Delirium is an acute syndrome with a fluctuating course of symptoms. Whereas, dementia is usually a gradual course of cognitive decline. The central feature of delirium is the person's inability to maintain focused attention. This is combined with an abnormal level of consciousness (arousal). Delirious residents may be oriented but are distractable, oversensitive to stimuli, anxious, and can't concentrate on environmental sounds and sights. They simply can't keep focused on a conversation, being continuously distracted by irrelevant things. Perception distortions such as hallucinations, illusions, and delusions are common. Language becomes abnormal and there may be mood changes (depression). Delirium is especially common in older people with dementia. It is also the most common complication of hospital admission. 30-50% for older people over 70, 35% after heart surgery, 40-60% after hip fracture surgery, and 64% for those in LTC. Delirium has serious consequences and has been associated with increased death and illness. Estimated in-hospital deaths are over 20% and within 1 year are 35-50%. Survivors of delirium have a risk of nearly 50% permanent neurocognitive impairment. Staff are critical in recognizing delirium symptoms as they have the most frequent interaction with residents. This is important since the diagnosis of delirium rests solely on clinical observation skills, symptoms are often subtle but serious. There are no specific diagnostic tests for delirium.

Myth 2: Delirium is about being "hyper"

There are 3 Subtypes of Delirium: hyperactive, hypoactive and mixed.

Hyperactive
This subtype displays all major features of delirium, and +/-
- Heightened arousal, awareness
- Sensitive to immediate surroundings (sounds, sights, smells)
- Verbally and/or physically threatening and aggressive
- Pulling repeatedly at clothing (carphologia)
- Restlessness, wandering
- Speech disturbance

Hypoactive
This subtype is more difficult to observe and is actually more common than the hyperactive type. Good observational skills are needed to detect this subtype. This type displays all major features of delirium, and +/-
- Often described as "confused"
- Drowsy, lethargy, staring into space, excessive sleep
- Usually cooperative

Mixed (Hypoactive and Hyperactive)
Mixed subtype usually fluctuates unpredictably between hyperactive and hypoactive types.

Centres of Excellence in Inter-professional Practice and Collaborative Geriatric Care and The Long-Term Care Resource Centre (LTCRTC) Hamilton

RGP

More information on This and Other Best Practices

- Contact your Regional LTC Best Practices Coordinator. They can help you with Best Practices Info for LTC. Find them at:
- www.rgpc.ca Click on Long Term Care
- www.shrtn.on.ca Click on Seniors Health
- Check out the Hamilton Long Term Care Resource Centre www.rgpc.ca
- Surf the Web for BPGs Some sites and resources are listed on pg 2.

The print questionnaire will be distributed in the mail the week of April 26, 2012. To participate in the survey, please fill out the questionnaire and return to the researcher by post in the stamped, addressed envelope provided.

Participation is completely voluntary, and results confidential. This survey is in no way job related, nor will a decision to participate or not, impact on your employment. Win A Day Off With Pay! To be eligible to enter a draw for a day off with pay, complete the questionnaire, fill out contact information, & return in the stamped, addressed envelope provided. The draw will be held June 21st, 2012.Thank you in advance for your participation!

Ann Tassonyi, Grad. Student, Applied Health Sciences, & Dr. Lynn McCleary, Assistant Professor, Dept. of Nursing, Brock University. This study has received clearance through Brock University Research Ethics Board, File #!!-192-McCleary. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca

Appendix P

Study information for staff newsletter at Long Term Care Home

Subject: BP Blogger Survey
To All Staff at (name of LTC home),

You are invited to participate in a research study about the BP Blogger.

The questionnaire takes 5-10 minutes to complete and will be distributed the week of April 26, 2012. The researchers would appreciate your help in finding out whether the BP Blogger meets the information needs of people who care for older adults. To participate in the survey please fill out the questionnaire and return to the researchers by post, in the stamped, addressed envelope provided.

Participation is voluntary, and results are confidential. This is in no way job related, nor will a decision to participate or not, impact your employment.

Win A Day Off With Pay!
To be eligible to enter a draw for a day off with pay, complete the questionnaire, fill out contact information, & return in the stamped, addressed envelope provided. The draw will be held June 21st, 2012.

Thank you in advance for your participation!
Ann Tassonyi Graduate Student, Applied Health Sciences, Brock University, and thesis advisor, Dr. Lynn McCleary, Associate Professor, Department of Nursing, Brock University.

If you have any questions regarding this research please contact:
Ann Tassonyi, Graduate Student, Faculty of Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca

This study has received clearance through Brock University Research Ethics Board, File # 11-192-McCleary. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca

Appendix Q

Letter of invitation for staff at Long Term Care Home

Project Title: BP Blogger: Descriptive Study of Electronic Knowledge Dissemination in Long Term Care

Principal Investigator: Ann Tassonyi RN, BScN
Graduate Student, Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca
Thesis Supervisor: Lynn McCleary RN, PhD
Associate Professor
Department of Nursing, Brock University
(905) 688-550, ext. 5160
lmccleary@brocku.ca

April 26, 2012

Invitation

You are invited to participate in a research study about the BP Blogger. We would greatly appreciate your help in finding out the distribution of the BP Blogger, clinicians' awareness, perceptions, and use of the BP Blogger. We would like to find out whether it meets the needs of people who care for older adults. We also want to learn more about electronic distribution of information about care of older adults.

The study is being done as part of Ann Tassonyi's thesis research for a Master of Arts degree at Brock University.

What is involved

Filling out a questionnaire. It would take 5 to 10 minutes to finish.

Potential Benefits and Risks

There are no known or anticipated risks for people who take part in this research study. There are no direct benefits to people who take part in this study, but the results may be helpful for finding better ways to support staff that provide care in LTC homes.

Confidentiality

Information collected in this study will be confidential. Your name will not be included on the questionnaire. You will not be identified in reports of this research. Questionnaires will be stored in a locked cabinet at the Department of Nursing, Brock University. Paper copies of the questionnaires will be destroyed about 6 months from now. Answers to the questions will be entered in a computer and stored in a secure file for 5 years. Only Ann Tassonyi and Lynn McCleary will be able to look at the questionnaires or open the computer files.

Voluntary Participation

This is in no way job related, nor will a decision to participate or not, impact on your employment.

Participation in this research study is completely voluntary. You can skip questions you do not wish to answer. Completion of this survey indicates your consent. If you do not participate in the study, there are no negative consequences. You can withdraw from this study at any time before Ann Tassonyi's thesis defence about 6 months from now. If you choose to withdraw, your questionnaire would be destroyed and your responses erased from the electronic file.

If you do not want to participate, please return the questionnaire using the stamped return envelope.

Publication of Results

Results of this study may be presented at conferences or published in professional journals.

Contact Information and Ethics Clearance

If you want more information or if you have any questions about the study, please contact Ann Tassonyi. If you would like a summary of the results of the study please contact Ann Tassonyi or Dr. Lynn McCleary for a summary of results and notification of publications. The study has received Ethics clearance through Brock University's Research Ethics Board File # 11-192-McCleary. If you have any questions about your rights as a research participant please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Draw for A Day Off with Pay!

To be eligible for the draw for a day off with pay please complete the survey, provide contact information in the section provided at the end of the survey, and return in the stamped addressed envelope provided. Contact information will be separated from the responses on the survey and entered into a draw to take place on June 21st, 2012. This information will not be used for any other purpose than the draw.

Please keep this form for your records.

Thank you for your participation,

Ann Tassonyi RN, BScN
Graduate Student, Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca

Appendix R

Reminder letter for staff at Long Term Care Home

Project Title: BP Blogger: Descriptive Study of Electronic Knowledge Dissemination in Long Term Care

Principal Investigator: Ann Tassonyi RN, BScN
Graduate Student, Applied Health Sciences
C/O Dept. of Nursing, Brock University
(905) 688-5550 ext. ####
at75fd@brocku.ca
Thesis Supervisor: Lynn McCleary RN, PhD
Associate Professor
Department of Nursing, Brock University
(905) 688-550, ext. 5160
lmccleary@brocku.ca

May 7, 2012

Invitation

Last week you received a letter requesting participation in a survey. If you have completed the survey, thank you for your participation. If not, please consider taking 5-10 minutes to complete it today. You are invited to participate in a research study about the BP Blogger. We would greatly appreciate your help in finding out the distribution of the BP Blogger, clinicians' awareness, perceptions, and use of the BP Blogger. We would like to find out whether it meets the needs of people who care for older adults. We also want to learn more about electronic distribution of information about care of older adults.

The study is being done as part of Ann Tassonyi's thesis research for a Master of Arts degree at Brock University.

What is involved

Filling out a questionnaire. It would take 5 to 10 minutes to finish.

Potential Benefits and Risks

There are no known or anticipated risks for people who take part in this research study. There are no direct benefits to people who take part in this study but the findings may be helpful for finding better ways to support staff that provide care in LTC homes.

Confidentiality

Information collected in this study will be confidential. Your name will not be included on the questionnaire. You will not be identified in reports of this research. Questionnaires will be stored in a locked cabinet at the Department of Nursing, Brock University. Paper copies of the questionnaires will be destroyed about 6 months from now. Answers to the questions will be entered in a computer and stored in a secure file for 5 years. Only Ann Tassonyi and Lynn McCleary will be able to look at the questionnaires or open the computer files.

Voluntary Participation

This is in no way job related, nor will a decision to participate or not, impact on your employment. Participation in this research study is completely voluntary. There are no negative consequences for not participating. You can withdraw from this study at any time before Ann Tassonyi's thesis defence about 6 months from now. If you choose to withdraw, your questionnaire would be destroyed and your responses erased from the electronic file.

If you do not want to participate, please return the questionnaire using the stamped return envelope.

Publication of Results

Results of this study may be presented at conferences or published in professional journals.

Contact Information and Ethics Clearance

If you want more information or if you have any questions about the study, please contact Ann Tassonyi. If you wish to receive feedback regarding the results of the study and notification of publications, please contact Ann Tassonyi or Dr. Lynn McCleary. The study has received Ethics clearance through Brock University's Research Ethics Board REB File # 11-192-McCleary. If you have any questions about your rights as a research participant please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Draw for a Day Off With Pay!

To be eligible for the draw for a day off with pay, please complete the survey, provide contact information in the section provided at the end of the survey and return in the stamped addressed envelope provided. This information will be separated from the responses on the survey and entered into a draw to take place on June 21st, 2012. This information will not be used for any other purpose than the draw.

Please keep this form for your records.

Thank you for your participation,

Ann Tassonyi RN, BScN
Graduate Student, Applied Health Sciences
C/O Dept. of Nursing, Brock University
at75fd@brocku.ca

Appendix S

Planned Data Analyses

Research Question	Analysis Plan
1.) What is the dissemination pathway of the BP Blogger? (How many people does it get to, how does it get to them?) Mary Lou →her list →other people → other people	How many people receive the BP Blogger? Number of people on Ms. Van der Horst's email distribution list Number of hits on the RGPc web-site in the month For all respondents, frequency of response to categories in Q 7 and then a sum of totals How do the respondents receive the BP Blogger? (mode of transmission) Frequency of response to question about receiving by e-mail and printed copy Question Q 6 Frequency of response to each category in Q 5 Directly from Ms. van der Horst or indirectly (passed on or web-site) Number of people who receive it directly from Ms. van der Horst - response to Q33 Indirectly (Number of survey respondents who say they have ever received a copy of the BP Blogger and who indicate that they do not receive copies from Ms. van der Horst (Q 5) and who indicate that they did not receive the request to participate from Ms. van der Horst Q 33) How do people pass it on? (mode of transmission) Frequency of response to Q 9 Frequency of passing on by multiple modes: Create a new variable (number of modes of transmission of BP Blogger) by counting the number of categories each respondent indicates within Q 9 - frequency of this new variable Who receives it? Frequency of each of demographic questions (professional designation, work setting, and role) who indicate that they have ever received a copy of the BP Blogger Q 25, 26, 27 vis-a-vis Q 5 Demographics (same three items Q 25, 26, 27) on separate sub-sample who receive it from Mary Lou (indicate she was the source for the request to participate in the study Q 33, indicate on Q 5 that they've received a copy from her) Who do respondent pass the BP Blogger on to? Frequency of response to Q 8 What factors might influence passing on the BP Blogger (spread/dissemination)? Frequencies of responses to Q 10 (barriers)

	Frequency of response to Q 11 (accessed by internet) Q12 Content Analysis, re suggestions to enhance spread Frequency of response to Q 29 (lack of e-mail access) and describe work setting and professional designation of people who say they don't have email access at work Frequency of response to Q 30 (internet access at work) and describe work setting and professional designation of people who say they don't have email access at work
2.) Does the BP Blogger reach the point of care staff?	Frequency of "yes" Q 1,2,4 response among those who indicate "direct care" category of Q 27 Frequency of response "yes" Q 1, 2, 4, among those who indicate "unregulated health care providers" or "nurses (R.N. /R.P.N.) & Allied Health Professionals" on Q 25 Content analysis of Q 3 for those who indicate they provide direct care Frequency of responses indicating respondents pass BP Blogger on to point of care staff (Q8 unregulated health care providers, nurses or allied health professionals)
3.) How is the BP Blogger perceived by the people who receive it?	How do respondents perceive it? Among people who indicate that they have ever received it: Frequency of response to Q 15-19, 21 Frequency of response yes among all items except "software capabilities" in Q 13 Content analysis of responses to Q 14, 20, 23, and 24 Frequency of response yes to "electronic newsletter" in Q 32 Factors that might influence perception Being a direct care provider (repeat analyses of perception among respondents who indicate they are direct care providers) Being a PSW or HCA(repeat analyses of perception among respondents who indicate they are PSWs or HCAs) How they first learned about it – content analysis of Q3 (looking at social factors in Rogers theory) Receiving it from a peer cross tabs of receipt from a colleague or not (Q5) and perception items (Q 15-19) Receiving it from a respected source cross tabs of receipt from a Ms. van der Horst or not (Q5) and perception items (Q 15-19) cross tabs of receipt from a manager or not (Q5) and perception items (Q 15-19)

4.) How is the BP Blogger used in practice?	Frequency of responses to Q 22 Content analysis of Q 23 & Q 24 How is BP Blogger used in LTC? Repeat analyses for respondents who indicate they work in a Long Term Care Home (Q26) How is BP Blogger used by point of care staff? Repeat analyses for respondents who indicate they provide direct care (Q 27) Frequency of responses to Q 22 by roles in Q 27

Appendix T

Categorization Matrix

Category	**Path, channels of communication**	**Individual & Organizational Characteristics**	**Perceived attributes of the innovation**	**Use in practice**
Definition	Communication is a social process, and channels of communication can include mass media, interpersonal and interactive communication via the internet such as through networks, e-mail, & web-sites	Individual attitudes to change, champions, communication networks, structure, absorptive capacity, and system openness affect diffusion of innovations.	Particular qualities of innovations enhance diffusion and uptake (relative advantage, compatibility, complexity, trialability, observability).	People need to know about an innovation, have a positive attitude towards it, and this may lead to implementation. Best practice information can be used to affect knowledge, attitudes, practice. Innovations may be adopted in normal practice. Reinvention may occur.
Potential Sub-categories	E-mail Mary Lou van der Horst Manager Posting Meeting Workshops Conference Network	Lack of e-mail, computers in LTC Attitudes to change Morale Management style Openness Resources Champions Networks	Recognizable Easy to read Best practice information Can try in practice Short Trendy Colourful Electronic	Knowledge Attitudes Direct care Policy Education Family education Student education Discuss at meetings Case discussions regarding individual clients